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Innovation amnesia: Technology as a substitute for politics
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Abstract

This paper outlines a theory of amnesia in the face of innovation: when apparent technological innovations occasion the disregard of preexisting cultural, legal, and infrastructural norms. Innovation amnesia depends on cultural patterns that appear to be increasingly widespread: the valorization of technological innovation and the sensation of limited political space for reforming social arrangements. The resulting amnesia is by default an extension of existing structural inequalities. If innovations arise through deploying concentrated private wealth, the amnesia will likely target institutions that facilitate collective power among less powerful people. Up and down social hierarchies, however, achieving amnesia through innovation can bear irresistible allure. When other paths for structural change become mired in inertia or gridlock, amnesia may appear to be the only available pathway to reform. The purpose of a theory of amnesia is to assist affected communities in noticing it when it occurs and wielding it to their advantage, particularly through mobilizing self-governance around moments of innovation.

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Introduction

The original name for the company behind the ride-sharing app Lyft was Zimride. The name represented an ambiguous tribute to Zimbabwe, the country where co-founder Logan Green traveled after graduating from college in California (Lawler, 2014; Raz, 2018). Having grown up in traffic-ridden Los Angeles, Green experienced southern Africa's informal transportation economy as a revelation: Drivers with room in their cars took hitchhikers for a small fee, co-producing a transit network without central planning and making more efficient use of their vehicles (Allaire, *et al.*, 2016). Green wanted to take this revelation home with him. But California law is restrictive toward hitchhiking (California. Constitution, 1988); the dominant norms there did not support informal transit as a commercial enterprise, although such practices were widespread in the United States as an underground economy (Shaheen, *et al.*, 2016). Official policy favored intricately regulated taxi systems that were expensive and inefficient (Çetin and Deakin, 2019). And so Green created an app.

Thanks to what became Lyft, along with Uber and various copycats, app-based ridesharing became a new norm throughout the United States, circumventing the laws governing taxis, hitchhiking, and labor relations (Collier, *et al.*, 2018). In southern Africa, too, app-based ridesharing has become increasingly common (Bashingi, *et al.*, 2020). The colonial circle turns again. Raw materials from the peripheries are processed in the capitals, only to be sold back to the people from whom they were taken.

The tale of Zimride represents a kind of resignation disguised as opportunity: a social condition that presents technological innovations as the most plausible strategy for social change. The brightness of their glimmer causes the guardians of norms and policy to abscond from their usual duties — to forget. As with Zimride, this forgetting can also provide cover for acts of conquest.

My ambition here is to outline a theory of amnesia in the face of innovation: when apparent technological innovations occasion the disregard of preexisting cultural, legal, and infrastructural norms [1]. Innovation amnesia depends on cultural patterns that appear to be increasingly widespread: the valorization of technological innovation and the sensation of limited political space for reforming social arrangements. These patterns have circulated globally through the promulgation of Silicon Valley's "Californian ideology," which expects private-sector, networked technology to eclipse longstanding political divides (Barbrook and Cameron, 1996; Hepp, *et al.*, 2023).

The resulting amnesia is by default an extension of existing structural inequalities. If innovations arise through deploying concentrated private wealth, the amnesia will likely target institutions that facilitate collective power among less powerful people. Up and down social hierarchies, however, achieving amnesia through innovation can bear irresistible allure. When other paths for structural change become mired in inertia or gridlock, amnesia may appear to be the only available pathway to reform. Neoliberal capitalism, for instance, limits meaningful access to democratic oversight (Brown, 2015); bureaucratic corruption can seem to hinder both democratic interventions and market entrepreneurship (Gupta, 1995). Technological innovation offers a path for achieving change, especially if that innovation can summon amnesia about existing social structures.

The purpose of a theory of amnesia is to assist affected communities in noticing it when it occurs and wielding it to their advantage. In particular, such a theory can help mobilize self-governance around moments of innovation, so that people have spaces for memory and resistance. More creative forms of self-governance, then, can reopen opportunities for overdue social change. To recognize amnesia might thereby enlarge the reach of collective power.

I employ *amnesia* as a metaphor grounded in experiences of disability — when mnemonic functioning is at odds with some normative expectation. Amnesia is an ambivalent condition of selective remembering that can serve as a basis for exploitation as well as liberation. Forgetting can be freeing, but it can also make one vulnerable to deception. More saliently, when one cannot take remembering for granted, it is an opportunity to become more observant about the cognitive and social conditions of one's life, such as the hierarchies of importance and patterns of habit on which memory rests. Incidents of amnesia reflect and produce culture. If we choose to remember, it should be not merely to preserve the way of things but to forge more intentional futures.

In what follows, I review foundational literatures on amnesia and innovation, then introduce a preliminary set of features that a theory of amnesia might include. I explicate some basic dynamics and several interrelated varieties of amnesia at work. Finally, I propose strategies of resistance for those who would prefer to retain agency in their relationships to the past.

Foundations

In an influential study of colonial memory, Ann Stoler regarded the language of amnesia as insufficient to describe the attempted erasure of colonized people's cultures and continuity, proposing instead the language of "colonial aphasia." While amnesia implies an unintentional misfiling of data, aphasia connotes "both loss of access and active dissociation":

> In aphasia, an occlusion of knowledge is the issue. It is not a matter
> of ignorance or absence. Aphasia is a dismembering, a difficulty
> speaking, a difficulty generating a vocabulary that associates
> appropriate words and concepts with appropriate things. [2]

The colonizer's inability to remember, that is, is not an innocent forgetting, but an integral, structural part of the colonial process. Erasure of colonized peoples, and the tortured justifications that it requires, involves a kind of self-dismemberment by the colonizer.

In search of a theory of memory surrounding innovation, I persist with the more expansive metaphor of amnesia. Amnesia carries a capacity for a wider variety of purposes, intentions, and power relations. But I mean to include in it the potential for the harm (and self-harm) in Stoler's account of aphasia.

More recent disability studies might question the logic of deficiency in Stoler's account of amnesia and aphasia, which treats both conditions as moral failures borne by the bearer. These conditions arise against the backdrop of culture. People forget many things all the time; amnesia is the forgetting of things that one is supposed to remember. Amnesia can also enable fresh possibilities, such as when youth-led social movements demand change that earlier generations found unimaginable. Experiences of disability in various forms have often instigated technological invention (Ellcessor, *et al.*, 2017; Mills and Sterne, 2017). The ongoing proliferation of software for note-taking and "knowledge management," for instance, may reflect anxieties about the limits of memory as people increasingly rely on computer-aided recollection in their daily lives (Cummings, 2023).

heidi andrea restrepo rhodes (2020) built on Stoler and others to meditate on the lived experience of mnemonic disability as neither an act of pure intention nor a purely medical phenomenon detached from culture. Aphasia, for restrepo rhodes, is a condition that generates poetics, disturbing the constraints of the social order within and against which aphasic speech arises. The difficulty speaking is a starting point for "artful deviation." With restrepo rhodes, I hold out the generative possibilities for turning a supposed malady into medicine.

Memory researchers, too, have linked forgetting and false memories with creativity (Benedek, *et al.*, 2023; Kommers, 2023; Thakral, *et al.*, 2021). According to one study, forgetting is both "a consequence and enabler of creative thinking" (Storm and Patel, 2014). In this sense, amnesia should be expected in cultures that prize innovation, and perhaps innovation even depends on it. Yet the science does not speak to questions of power: What is forgotten, what is remembered, and who benefits?

Langdon Winner laid especially broad foundations for a theory of amnesia—regarding technological innovation, specifically in works such as *The whale and the reactor* (1986) and "Information technology and educational amnesia" (2009). At the end of the essay "Do artifacts have politics?" (1980) Winner observed:

> In our times people are often willing to make drastic changes in the
> way they live to accord with technological innovation at the same
> time they would resist similar kinds of changes justified on
> political grounds. [3]

Winner did not regard this as a neutral or necessary phenomenon. Earlier, in the same essay he explained how technological innovation is organized through a jagged topology of power and staggered access to participation in the early moments of innovation:

> Consciously or unconsciously, deliberately or inadvertently,
> societies choose structures for technologies that influence how
> people are going to work, communicate, travel, consume, and so
> forth over a very long time. In the processes by which structuring
> decisions are made, different people are situated differently and
> possess unequal degrees of power as well as unequal levels of
> awareness. By far the greatest latitude of choice exists the very first
> time a particular instrument, system, or technique is introduced.
> Because choices tend to become strongly fixed in material
> equipment, economic investment, and social habit, the original

> flexibility vanishes for all practical purposes once the initial
> commitments are made. In that sense technological innovations are
> similar to legislative acts or political foundings that establish a
> framework for public order that will endure over many generations.
> [4]

These observations are the basis of the broader theory that follows in this paper. Winner's foundation for a theory of amnesia has remained merely foundational in not yet fully naming or organizing the concept and its features, or explicating the varieties of agency at play in establishing or resisting it.

While calling into question the necessity and justice of innovation-enabled social change, Winner also placed doubt on the veracity of many claims to innovation. In contrast to my usage of amnesia here — an amnesia about foregoing norms and rules — Winner (2009) diagnosed amnesia by which supposedly new innovations recapitulated artifices of the past, even the quite recent past. Specifically, Winner identified preexisting educational practices repackaged and resold as innovative. The structural power that certain cultures confer on innovation events produces an incentive to falsely allege their occurrence.

Scholars of maintenance and care have more recently echoed Winner's skepticism about claims of innovation, and of innovation's importance with respect to the less glamorized activities that surround and enable them (Federici, 2012; Vinsel and Russell, 2020). David Edgerton (2006) observed, in contexts from daily work to warfare, how innovation-obsessed societies noticed only new things and failed to appreciate the persistence of the old. World War II newsreels were full of mighty airplanes and battleships, but they rarely showed horses that were still vital weapons of war [5]. Rather than centering innovation at all, we might more accurately say that amnesia arises through experiences of surprise (Gross, 2010) or events that amplify preexisting commitments of faith (Fries, 1983; Supp-Montgomerie, 2021). Amnesia also leaves potential innovations undone in its wake (Frickel, *et al.*, 2010).

Innovation operates as a phenomenological and cultural construct, an experience of the apparently new that has special force for those who experience it. Neurological studies detect novelty as a distinct, significant form of stimulus that stands out against the familiar (Weierich, *et al.*, 2010; Zhang, *et al.*, 2022). Innovation-oriented cultures continually reinforce this cognitive aptitude and vulnerability.

A theory of innovation amnesia should challenge innovation scholarship such as Everett R. Rogers' "diffusion of innovation" framework. Rogers, by my reading, would relegate amnesia to the "consequences of innovation," a sort of afterthought to the primary story of invention, circulation, and adoption (Rogers, 2003). Rogers also frequently failed to notice essential power dynamics, such as when recounting the Irish potato famine without reference to British colonial policies [6]. In contrast, I regard performances of innovation (and the accompanying amnesia) as inseparable from relations of power, to the point that the technology itself can serve more as a costume-change than the primary plot. What looks to some like technological progress may be, to others who experience it, a regression in terms of justice or equality.

Thinking at the register of Black studies and critical race theory further complicates claims to innovation. Ruha Benjamin, for instance, stressed how technology development encodes and extends the social hierarchies that suit the builders. She noted that

> innovations reflect the priorities and concerns of those who frame
> the problems to be solved, and ... such solutions may reinforce
> forms of social dismissal, regardless of the intentions of individual
> programmers. [7]

Racism is no mere epiphenomenon to innovation, a bug fixable by tweaking parameters. Benjamin reminds us that race itself is a technology, an innovation being continually reinvented to evade social antibodies, and forgetting its inventedness is crucial to its functioning [8]. Thus it comes as little surprise that innovation in white supremacist societies so often produces tools that elevate whiteness as normative, neutral, and innocent.

Stefano Harney and Fred Moten (2013) joined in this critique through their analysis of racialized logistics, which regards technological innovations, like containerization, as the ongoing reinvention of a slave ship's hold. They,

together with Benjamin, hold out the possibility of more liberating kinds of innovations, but by and large what they see is grift at the expense of those with the least to lose: "Show me a business innovation and I will show you a worker's rebellion" [9].

The repressed prehistories of rebellious life — the human froth that Harney and Moten call "fugitivity" — lay far and wide across the ruins of conquest, enslavement, and settler colonialism. Michel-Rolph Trouillot described this pattern when writing, in *Silencing the past*, that "narratives are made of silences" [10]. So many churches have been built over the foundations of temples, from Rome to Cholula — an act of dominance through forgetting, even if just enough ruins remain to act as a reminder of the dominance itself.

As a precursor for resistance, Winner made a call for understanding innovation events more intentionally: "It is important for us to achieve a clearer view of these matters than has been our habit so far" [11]. Scholars have proposed various strategies for finding clarity in the blur of innovation, from the more cautious "precautionary principle" (Stirling, 2017) to the *laissez-faire* embrace of "permissionless innovation" (Thierer, 2016).

Scholars of law and business innovation have also noticed amnesia in their midst. They have observed how incidents of "disruptive innovation" (Christensen, 1997) unsettle not just incumbent businesses but also regulatory regimes. Such "regulatory disruption" (Collier, *et al.*, 2018; Fairfield, 2021; Terry, 2017; Walker-Munro, 2019a, 2019b) offers opportunities to companies contemplating a strategy of circumventing existing laws:

> if ... a regulatee outweighs the regulator in responsiveness, the regulated firm will be able to outrun the regulator's detection capability and enforcement activities whilst also "cashing in" on their asymmetry with other firms. [12]

Regulatory regimes, such as patent law and capital markets, reward what is "new for the sake of new" (Price, 2020), but not necessarily innovation that addresses problems or meaningfully improves on what preceded it. Institutional designs thus encourage performances of novelty untethered from their precursors.

Finally, popular polemical works have diagnosed aspects of amnesia. Douglas Rushkoff (2013) described an onslaught of marketing and alleged technological progress in which the "now" poses such demands as to subdue people's capacity to remember the past or imagine the future. Naomi Klein (2008) identified a pattern of "disaster capitalism," in which politicians have utilized moments of crisis to eliminate institutional constraints on flows of corporate capital. Both Rushkoff and Klein seek to explain a sense of dislocation and powerlessness by identifying elites' strategies for extending their power.

All of these studies can inform a theory of amnesia around innovation claims. The following section draws threads across several amnesiac cases, weaving ephemeral discussions elsewhere into a more systematic framework.

Dynamics

It has become a familiar refrain, when leaders of Internet companies testify before governments, for the resulting news coverage to emphasize the ignorance and irrelevance of the *ancien régime* in relation to new apps (Fairfield, 2021; Snider, 2020; Zetlin, 2018). It may be true that older legislators, who dominate bodies such as the U.S. Congress, lack experiential knowledge of technologies that rose to prominence only recently. But those legislators have expertise in the real subject of governmental hearings: the exercise of power.

Narratives that emphasize politicians' ignorance play into a claim that works in favor of technology companies — that regulation of technology is possible only for those who fully understand a given technology. Upon closer consideration, however, emerging technological challenges follow familiar patterns. Technical expertise may be useful in helping regulators apply old principles to new technologies, but before long the innovations reveal themselves as moves in yet another contest for dominance. Expertise in orchestrating power may be more relevant than expertise in software engineering.

Consider this supposition in light of several recent cases where apparent innovations promote amnesia about political infrastructures.

A particularly visible and widely discussed case of amnesia has surrounded the rise of the so-called "gig economy," in which online platforms mediate forms of labor previously organized in other ways. This includes app-based ride sharing, such as the aforementioned Lyft, and short-term accommodation rentals, which compete with densely regulated and unionized sectors such as taxis and hotels. Although the technology at hand introduces fresh dynamics, both legal scholars and courts have recognized companies' treatment of workers as systematic "misclassification" (Cherry, 2016; Pinsof, 2016; Scheiber, 2018). Platform companies, that is, claim their workers are not entitled to the rights, protections, and benefits normally afforded to those doing similar work. Seemingly, the use of convenient mobile apps means that the preceding order does not apply. While some Global North jurisdictions have been able to set their own terms for gig platforms, the platforms' regimes of precarious work appear to have been most thoroughly implemented in the Global South (Anwar and Graham, 2021; Choudhary and Shireshi, 2022; Lesala Khethisa, *et al.*, 2020). Amnesia with respect to norms and laws governing labor is not an innocent oversight, but a strategy to pass costs and risks from a given company to its workers.

A parallel feat of amnesia occurred in the context of rules surrounding personal information and privacy. Companies such as Google (now Alphabet) and Facebook (now Meta) have built empires on the basis of data collection and targeted advertising; their business models depend on not being regulated like traditional communications networks, such as postal mail and telephones [13]. Postal services and telephone companies, for instance, cannot generally collect the content of communication and use it to sell targeted advertising. U.S. telecoms cannot send robocalls about products that users discuss in conversations with their friends. But the same premise does not apply to essentially the same behavior on the Internet, where the content and metadata of user communications fuels ad markets. Awed by the economic power of new platforms and the apparition of innovation, regulators allowed earlier social contracts to expire. Facebook founder Mark Zuckerberg was once so confident to contend that privacy, as a basic social expectation, was on the verge of obsolescence (Johnson, 2010).

As these platforms and others have extended their reach around the world, they have precipitated concerns under such terms as "data colonialism" and "digital colonialism" (Avila, 2020; Couldry and Mejias, 2019; Kwet, 2019). Companies headquartered in the Global North gather and profit from data wherever people adopt them. Decisions about data flows and algorithmic design occur far from where many users actually experience their effects, reproducing some dynamics of colonial economies without requiring methods of military force

These innovations led to a further one: the neglect of antitrust tradition. This amnesia had been under careful cultivation for some decades before Internet companies contrived to take particular advantage of it. After legal reformers succeeded in reducing U.S. antitrust policy to the narrow goal of lowering consumer prices, ambitious online platforms achieved monopolistic power by providing low-cost or no-cost services (Khan and Vaheesan, 2017) — as if their business models were designed around regulatory amnesia. Their accumulations of market power — once a concern of antitrust regulators — went long unnoticed because end users were not being overcharged. Meanwhile, fair competition in entire sectors was decimated by platforms' advertising, retail, and search offerings. This phenomenon was diagnosed with particular acuity in a paper on Amazon by Lina Khan, who, as of this writing, is attempting to reverse antitrust amnesia as chair of the Federal Trade Commission (Khan, 2017; Meyer, 2018). Khan has stressed that the most pressing need is not for new laws about new technologies, but for the mere application of century-old laws to current cases of market concentration.

A final set of examples comes in the context of financial services. The M-Pesa "mobile money" network used across East Africa is often widely celebrated as an innovative success story in economic development. Devised in the United Kingdom and deployed through the transnational corporation Safaricom, M-Pesa rode the support of political elites to secure a near-monopoly over day-to-day payments in Kenya and beyond (Foster, 2024; Tyce, 2020). Once again, technology afforded a regulatory sleight of hand. By moving the technology of money from hard currency and banks to mobile networks, Safaricom was able to adopt roles typically held by the public and financial sectors without facing relevant regulations.

To take a case that more radically departs from the reach of regulation, blockchain technology has enabled the concoction of currency-like and equity-like digital assets without the legal registration that financial assets typically require. Bitcoin creator Satoshi Nakamoto proposed this first blockchain as a new basis for the global

financial system — an ambition that attracted users weary of legacy regulatory regimes (Nakamoto, 2009; Swartz, 2018). Regulators around the world have varied in their responses, but they have tended to be slow in recognizing the extent to which their own financial rules might already apply to these perplexing digital assets (Mendelson, 2019; Yadav, *et al.*, 2022). As a result, repeated and systemic scams have plagued the ecosystem (Swartz, 2022). The more hopeful view among enthusiasts is that blockchain is "speed-running" economic history, replaying centuries of financial crises and corrections (ceejayoz, 2021); tellingly, this is a narrative premised on having forgotten those lessons in the first place.

The cases of amnesia reviewed so far are ambivalent in their effects. Ridesharing apps are often more convenient for riders, and sometimes drivers, than taxi systems. Monopolistic platforms online bring nearly miraculous services to their users at low or no cost. M-Pesa has meaningfully reduced the cost and difficulty of financial transactions wherever it has been widely adopted. Blockchains may enable forms of community ownership and governance that economic policies have otherwise hindered (Rozas, *et al.*, 2021); blockchain-based art sales have introduced the norm of paying royalties to artists for resale transactions in contexts where that norm was not already established by law (van Haaften-Schick and Whitaker, 2022).

Well before the rise of digital platforms, the advent of pharmaceutical contraceptives facilitated widespread experiences of both disruption and liberation, enabling people to question forms of gender-based oppression that previously had seemed impervious to criticism. "The pill" occasioned significant shifts in women's behavior, undermining patriarchal norms. After 1970, for instance, U.S. women dramatically increased their participation in higher education and waged work (Goldin and Katz, 2002). The average age for first marriages rose as well. While critics have mourned the effects on family stability and traditional values, women took advantage of an innovation in sexual technology to produce amnesia about longstanding norms and expand their economic and professional options.

Based on these examples and more, it is possible to assemble a preliminary summary of the dynamics that come with innovation amnesia. These dynamics, as I phrase them, treat amnesia itself as the agent, rather than the people involved. This is not because people do not bear ultimate responsibility for acts of amnesia — they do — but because amnesia is a sufficiently complex cultural phenomenon to have diverse causes and motivations, depending on the context. For the purposes of a theory, I abstract over these and provisionally tolerate the fiction that amnesia itself is an agent in the production of culture.

Firstly, *amnesia makes claims of historical rupture at a moment of innovation*. Sharing rides was nothing new. Taxi services were nothing new. But introducing a version of those based on mobile apps, integrating recent technologies like GPS-based mapping and widespread cellular networks enabled a performance of novelty. Blockchain enthusiasts see the initial Bitcoin "Genesis Block" as heralding an entirely new era, more than recognizing it as continuous with longstanding metallist, cypherpunk, and libertarian movements (Brunton, 2020; Swartz, 2018). Contraceptive pills heralded a "sexual revolution." There is truth to stories of both novelty and continuity, but amnesia depends on emphasizing the former over the latter.

Then *amnesia undermines the relevance of existing institutions*. If digital services can continually lower costs for consumers, perhaps the whole antitrust apparatus is no longer necessary. If a blockchain can issue currency digitally, perhaps public monetary policy is obsolete. M-Pesa has shown how moving payments to a distinct technology can displace the earlier roles of banks and governments in everyday transactions. Map-equipped apps lessen the need for taxi drivers with local knowledge, and social networks turn privacy into an inconvenience. Pharmaceutical contraception invited anxieties that the institution of marriage faced an existential threat. For amnesia to set in, reigning institutions must appear antiquated and decadent, and most of all unnecessary, even if in fact they continue to play important roles in upholding the very social order that the innovators depend on.

More specifically, *amnesia attacks accumulations of collective power*. Sometimes this is the power of an organized elite, such as the bankers in Bitcoin's sights or the media moguls who controlled advertising before online platforms did. But it is easier for amnesia to target more vulnerable groups, such as labor unions or small businesses. As with Naomi Klein"s (2008) concept of "disaster capitalism," the rupture of innovation serves as an excuse to disregard prevailing rules, and thus to overwhelm the resistance that collective power might present. Meanwhile, new collectivities form around the innovation, such as short-term rental host associations and blockchain-based social clubs. Amnesia thereby serves to enable a shift in the "allocation of coordination rights," as Sanjukta Paul (2020) puts it — rearranging who is and is not allowed to build power collectively.

Finally, with collective power neutralized, *amnesia extracts value through the privilege of early adoption*. Early adoption might come in the form of technical skill, risky entrepreneurship, or capital deployment. Hobbyists expend leisure time to try out new technology before it becomes widespread. Venture capital funds enable investors reduce their overall risk by diversifying it across multiple startup companies (Nicholas, 2019). Through the network effects that online platforms rely on (Katz and Shapiro, 1994), early-comers gain cheaper access to stocks of attention, capital, and insider knowledge than those who come later. Safaricom's early advantage in deploying M-Pesa has turned in a resilient monopoly in Kenya. Early cryptocurrency users have turned pocket change into fortunes, and platforms with access to large stores of user data become fortresses that easily fend off — or merely acquire — would-be competitors. When sufficiently deployed, amnesia can overwhelm the institutional barriers that would otherwise prevent such extraction.

Amnesia can also be employed to invert some of these dynamics. The 2011 outbreak of mass protests in North Africa and elsewhere around the world leveraged innovations in social media to produce a period of amnesia about norms for political speech, to the point of unseating intransigent dictators (Tufekci, 2017). The early adoption by younger protesters prevented authorities from undermining their collective power — at least until dictators developed greater sophistication with the new technologies. A similar dynamic occurred, though without the same stakes or bloodshed, in classrooms after the public release of ChatGPT in late 2022; within weeks, mass early-adoption by students undermined entire categories of assignments, as the lower cost of cheating overwhelmed the enforcement of legacy policies on academic honesty (Lo, 2023). This act of uncoordinated collective power by non-elites challenged their institutions' integrity, though educational elites soon began formulating coordinated responses to maintain traditional norms.

While innovation amnesia has the tendency to favor elites, it opens contested spaces. The dynamics of amnesia are not entirely predictable or linear. Both elites and non-elites may have an interest in undermining dominant institutions, but their interests typically diverge on questions of how to do so and what will come next. To further clarify these dynamics of contestation around innovation, the next section turns to some of the different forms amnesia can take depending on the social contexts where it occurs.

Varieties

The protests that took hold of Lebanon in late 2019 had many causes in the country's governance failures of recent years. But the precipitating trigger was the announcement of new taxes, particularly one on users of social media apps (Fjeld and Abdunnur, 2020). A year earlier, Uganda introduced a similar tax on social media use (Boxell and Steinert-Threlkeld, 2022; Kakungulu-Mayambala and Rukundo, 2018). In both cases, the taxes were roundly criticized by human rights advocates for stifling free speech in repressive political contexts, which appears to have been in large part their intended purpose. The ubiquity of online platforms for daily communication among low-income people made the taxes seem especially cruel. Neither tax has survived. Yet, if governments had not waited for the platforms to achieve ubiquity, perhaps the basic idea would not have come as such a shock: that the products of foreign-owned companies, extracting value from local citizens and producing jarring shifts in society, should be subject to a levy. Many people around the world pay taxes on fuel (a basic need) and cigarettes (an addictive habit), or even, in the case of Great Britain, on receiving television broadcasts (a medium of informed citizenship). Should taxing social media be necessarily so strange?

Here I will introduce three varieties of innovation amnesia, which each contribute to the dismay that now accompanies an idea like taxing social media. Surely there are other varieties as well, but in explicating these I hope to demonstrate how a theory of amnesia can also be specific in naming distinct manifestations.

One variety is *cultural amnesia*, the foundation of the others — a structure of belief and practice in which certain forms of innovation take precedence over any conflicting commitments of even the recent past. In the case of social-media taxes, this might manifest in the normative expectation that social media, by presenting itself as cost-free, can escape the norms surrounding other goods with similar properties. *Policy amnesia* occurs when recognized authorities have embraced cultural amnesia to the point of neglecting to apply existing legal frameworks in contexts of apparent innovation; any eventual legislation that attempts to produce continuity comes

to be perceived as a sudden affront. Finally, *infrastructural amnesia* involves the abandonment of legacy infrastructures for ones that seem more innovative, without considering the costs of doing so — such as the risks in outsourcing communications networks to foreign corporations. These varieties can manifest one or more of the dynamics outlined above.

Table 1: Summary of the dynamics and varieties that may occur in innovation amnesia.	
Dynamics	**Varieties**
Undermining the relevance of existing institutions	*Culture* — Certain forms of innovation take precedence over any conflicting commitments
Attacking accumulations of collective power	*Policy* — Recognized authorities neglect to apply existing legal frameworks
Extracting value through the privilege of early adoption	*Infrastructure* — Abandonment of legacy infrastructures without considering the risks of doing so

Consider each of these varieties of amnesia in more detail.

The capacity for capitalism to morph its cultural self-representations has been long observed, whether in the celebratory spirit of "creative destruction" (Schumpeter, 1942) or among Marxist critical theorists observing the recuperation of radical culture into marketable goods (Debord, 2002). The quest for surplus value continually supplants earlier regimes of value — where surplus was less easy to squeeze out — with the allure of a newer trinket. The cultural past is vulnerable, after all; as Walter Benjamin (1940) put it, "Every image of the past that is not recognized by the present as one of its own concerns threatens to disappear irretrievably." Innovation, in Benjamin's terms, is a claim to "messianic time," a rupture from outside of history, placing a demand on the present to reinvent itself.

Antti Tarvainen (2022) draws on Benjamin's account of modernity forever "corrupting and capturing the 'new'" in a reading of startup culture in Israel/Palestine, the Silicon Wadi. Just as the early Silicon Valley described itself with settler-colonial and evangelical terminology of "homesteading" on the "frontier" (Rheingold, 1993), Israeli performances of technological innovation aid in the production of an amnesia against the existence of Palestinian life:

> The origin story of Israel's innovation ecosystem becomes a divine one and assumes the character a world-transforming messianic role. The progress of the innovation economy and the progress of divine history is thus entangled with Israel's success and its rule over the "holy land." [14]

Such a cycle of producing cultural amnesia, according to Saskia Eleonora Wieringa (2009), also explains the function of moral panics about sexual morality in postcolonial countries. The regular resurfacing of these panics, produced each time through fresh spectacles, enable postcolonial leaders to assert their power through reimposing colonial homophobia and transphobia, against any lingering memory of pre-colonial sexual diversity and cultural inclusion. Cultural amnesia inhibits the endemic, adaptive resources of a community to produce a society where cultural norms can be imposed more easily from above.

If "politics is downstream from culture," as the reactionary media entrepreneur Andrew Breitbart put it [15], then perhaps cultural amnesia is the only amnesia necessary to accumulate power. But particularly when a cultural

fabric erodes through repeated forgetting, public policy becomes a critical leverage point. I have reviewed various examples of policy amnesia already, such as the disregard for transportation and labor laws in the face of app-based ridesharing, or the failure to enforce antitrust laws in the face of market power that grows at low or no cost to consumers. Policy amnesia occurs when a policy regime fails to apply existing laws to an apparent innovation; perhaps the violations occur in unfamiliar forms or utilize unfamiliar technology. By the time regulators recognize what has happened, the innovation may have taken hold sufficiently in society so that enforcing the law would provoke backlash and cause the regulator to lose legitimacy (Walker-Munro, 2019b).

Inducing regulatory amnesia has become a matter of explicit business practice. Books by Tusk (2018) and Burfield and Harrison (2018), for example, decried the stifling rigidity of existing policy regimes and explained their circumvention through business innovation. Businesses seek to secure the gains of innovation through regulatory arbitrage—fleeing to less developed regulatory environments and compelling stricter regulators to relax their rules with the threat of exit (Pollman, 2019). The ability of corporate actors to move freely among jurisdictions thus reinforces cultural tendencies toward amnesia with economic incentives.

Policy amnesia is not a merely subtractive process, however. When one set of regulators fails to regulate, other regulative entities step in. In many cases involving online platforms, code becomes a kind of legislation (Lessig, 2006); proprietary algorithms begin governing a transportation network that was previously overseen through public agencies, or corporate "terms of service" agreements replace past privacy regimes. A new regulatory infrastructure fills the vacuum left by the forgotten or forgetful one.

Amnesia also occurs around infrastructures themselves, whether they are publicly or privately governed, whether instantiated in physical plants or digital protocols. Societies organize themselves through "infrastructural imaginaries" (Parks, 2015) — ways of thinking about the organizing conditions upon which economies, media, food systems, sanitary flows, and other necessities depend. Amnesia can intervene in those imaginaries, when one kind of infrastructure falls out of notice due to another that is seemingly more innovative or convenient. The amnesia may involve forgetting that the previous infrastructure is still useful, still necessary, or more democratic than its replacement. Think, for instance, of the rise of the automobile in the mid-twentieth-century United States, and the all-but abandonment of long-distance passenger rail. In its enthusiasm (and public subsidies) for automotive innovation, the country lost access to a low-carbon transit option and ceded the ongoing technological improvements in rail to other places. Yet trains still keep supply chains running, however encased they have become in rust.

Mulligan and Nissenbaum (2020) introduced the concept of the "handoff" for analyzing the ethical consequences of a shift in the technology that performs a certain function. For instance, they examine how e-mail has adopted many functions of postal mail, while introducing distinct ethical dilemmas around privacy and data retention. Similar questions arise when a society turns to foreign social-media platforms for personal communication, rather than local post offices or regulated telecom lines. The success of M-Pesa in Kenya, led by a significantly foreign-owned company, has produced South-to-North wealth transfers from users' payment fees. Innovators frequently choose to emphasize the progressive qualities of such a transition — same old function, with new conveniences and possibilities — but neglect to warn about what sovereignty, privacy, or social cohesion may be lost.

One of the many infrastructural disruptions that arose from the COVID-19 pandemic was an amnesia around the expectation that workers must convene at a physical workplace. Workers seeking to challenge that expectation, together with the long commutes and constant surveillance that workplaces can entail, used recent advances in videoconferencing technology to produce amnesia about earlier workplace infrastructures (Ehn, et al., 2022; Sahut and Lissillour, 2023). Since the most strenuous lockdowns, employers and employees alike have jockeyed to take advantage of the amnesia for their interests.

Once again, amnesia can produce welcome outcomes for non-elites, especially when the preceding regimes had become overly calcified. Attempts to counteract innovation amnesia, such as social-media taxation, may reveal themselves to be merely self-serving for legacy power-holders. What communities need above all is the capacity to choose what they forget and what they remember. The following, final section explores strategies for securing that.

———————————————————————

Resistance

Innovation need not leave us so much in awe as to be forgetful; many societies throughout human history have instead regarded it with suspicion. The word for innovation in Arabic, *bid'ah* (بدعة), has had a contested life, having been used both in praise of poetic achievements and to denounce attempts at modifying core religious tenets. A saying of Muhammad remembered in Islamic tradition, for instance, holds that "every matter newly begun is innovation, every innovation is misguidance, and every misguidance is in hell" (Keller, 1995). When I share passages like these with my students in the twenty-first-century United States, they are often taken aback that anyone might regard innovation — which so much of their education has encouraged them to lionize — as a road to perdition.

It is not necessary, however, to curse innovation entirely in order to curb its amnesiac temptations. Islamic scholarship understands Muhammad's denunciation in nuanced ways; not every innovation is "newly begun," denying its tether to a past. New things can arise through a relationship with what came before. Langdon Winner (1986) suggested that the remedy to the glimmer of innovation is scrutiny:

> The idea that a society might try to guide its sociotechnical development according to self-conscious, critically evaluated standards of form and limit can no longer be considered a "heroic decision"; it is simply good sense. Because technological innovation is inextricably linked to processes of social reconstruction, any society that hopes to control its own structural evolution must confront each significant set of technological possibilities with scrupulous care. [16]

What, then, is "scrupulous care"? Is it another congressional hearing, another sweeping regulation, or a regime in which every apparent novelty must face Plain Anabaptist levels of suspicion before its introduction (Ems, 2015), a posture of guilty-until-proven-innocent?

The dynamics of innovation amnesia highlighted in this paper can guide the attention of communities in defending against innovators seeking to extend power over them. Does a given innovation undermine and seek to replace valued institutions? Does it attack collective power, such as by isolating people from each other or preventing them from organizing collectively? Does it shift flows of value from late adopters to early adopters? Recognizing these dynamics, communities can explore a range of strategies for responding to unwanted incursions of amnesia.

Walker-Munro (2019b) reviewed strategies by which regulators met outbreaks of lawbreaking, from "zero tolerance" to more flexible "smart" or "responsive" approaches. With each came a set of potential cost-benefit calculations for the purveyor of disruption. "If crime becomes an actuarial calculation and the decision itself is economically rational," Walker-Munro noted, "then law enforcement becomes equally utilitarian." [17] Rule-breaking is just another potential cost on a balance sheet. The alternative, then, is to recognize formal policies as only one form of regulation, alongside civil society and the market, infrastructural designs and popular education. Put in terms of amnesia: there are many possible sites of social memory, and when confronted with waves of innovation, people can strengthen diverse ways of remembering

Communities can begin by trading the default deference to top-down regulatory regimes for the cultivation of "governable spaces" in digital life, particularly where the dangers of disruption are most rampant (Schneider, 2024). This proposal builds on a larger literature calling for participatory processes around technological change (Sclove, 1995; Smith, *et al.*, 2005), and therein lie many more intricate proposals for how to proceed. As Stirling (2008) stressed, participant governance need not be oriented toward merely "closing down" ambivalent innovation-events, but can focus on "opening up" by identifying opportunities and synergies beyond those that appeal to the entrepreneurial class.

A governable space might be a group chat that workers control to share concerns about their treatment by an employer. It might be a server that a neighborhood uses to host a non-commercial forum that lacks the nudges toward conflict and polarization that corporate platforms deploy. It might be a piece of farm equipment produced

from open source plans that workers can use and repair without a restrictive license agreement.

Introducing governable spaces stands in contrast with the tendency of investor-backed innovations to instill amnesia against bottom-up collective power. In the context of uncertainty around an innovation like ridesharing apps, governable spaces could mean mechanisms for drivers to self-organize and voice their concerns. Where social media threatens the fabric of society, users could have more rights and power to shape the behavior of their platforms. When a new infrastructure proposes a "handoff" from an older one, the new one should be at least more accountable to society than what came before. Groups of people empowered to make decisions are likelier to stop, discuss, and remember than isolated individuals (Vollrath, *et al.*, 1989). Elite regulators, in contrast, often end up siding with corporate innovators so as not to appear unsophisticated about emerging technologies (Foroohar, 2023).

I read the challenge of "scrupulous care" as a matter of inserting creative, democratic deliberations at the sites of innovation—putting the governance of innovation in the hands of people whose lives it stands to reshape. Regulators may not immediately have the answers for how to respond to apparent novelty, but the people most affected by it do. Those people will see before others when a proposed innovation is an attempt to siphon away power from them. At the same time, opening new doors to social change makes people less reliant on amnesia to bypass failed institutions, and thereby less susceptible to forgetting. Resistance to amnesia should not just seek to halt it with memory but also to better satisfy the causes of its appeal.

For instance, as app-based ridesharing became popular in Taiwan, the government's so-called "digital minister" Audrey Tang led a process of citizen deliberation to propose policies that attracted a broad consensus (Hsiao, *et al.*, 2018; Tseng, 2022; Weyl, *et al.*, 2024). Tang utilized open digital platforms and in-person meetings to gather ideas, feedback, and legitimacy. A similar approach, based on openness and participatory processes, characterized the country's uncommonly effective response to the novelty that the COVID-19 outbreak presented (Leonard, 2020). At the appearance of something new, a society need not merely stand in awe or carry on; it can take the opportunity to establish forums for collective decision-making.

In the context of emerging artificial intelligence technologies, McQuillan (2022) called for "people's councils" — spaces where non-elites can gather, discuss, and plan responses to the innovations being introduced in their workplaces and communities. McQuillan primarily expects these councils to be sites of resistance against the technological imposition of corporate and state power, on the model of the Luddite movement in nineteenth-century England. When establishing community-controlled innovation is not an option, learning to recognize amnesia as a widespread pattern can at least serve as the basis of asymmetric insurgency. But in the decades after the Luddites smashed industrial looms, those same workers built powerful cooperatives that had factories of their own (Holyoake, 1908). Perhaps AI, too, could someday operate as a commons rather than a colonizer.

Amnesia is an ambivalent force, one that can be turned back against those who wield it. Well-organized people might enter the power vacuums that amnesia leaves to establish policies and norms that extend, rather than contract, their collective power. Gig workers can congregate at old taxi stops to discuss their grievances, and users who rely on digital communications can form agreements to use encrypted protocols. At moments when the normal rules are in an amnesiac flux, the elite innovators are vulnerable, too. Insurgencies can use new technologies to undermine institutions that are not serving them. They can challenge accumulations of elite power. They can use the advantage of early adoption to catch oppressors off guard.

Those who know to expect the deployment of amnesia from elites will be better able to use it toward their own ends—to defend hard-won institutions as well as to undermine legacies that do them harm. Communities can prepare themselves, despite temptations to do otherwise, to co-govern their own memories. ▪️M

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Notes

1. This essay builds on my earlier, briefer explorations of innovation amnesia (Schneider, 2024, 2023, 2020).

2. Stoler, 2011, p. 125.

3. Winner, 1986, p. 39.

4. Winner, 1986, pp. 28–29.

5. Edgerton, 2006, p. 35.

6. Rogers, 2003, pp. 423–424.

7. Benjamin, 2019, p. 79.

8. Benjamin, 2019, p. 36.

9. Harney and Moten, 2013, p. 89.

10. Trouillot, 2015, p. 152.

11. Winner, 1986, p. 39.

12. Walker-Munro, 2019b, p. 133.

13. Hayes, 2014; Zuboff, 2019, p. 172.

14. Tarvainen, 2022, p. 8.

15. Donovan, *et al.*, 2022, p. 329.

16. Winner, 1986, p. 54.

17. Walker-Munro, 2019b, p. 131.

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Editorial history