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TIME ENCLOSURES AND THE SCALES OF OPTIMISATION: FROM IMPERIAL TEMPORALITY TO THE DIGITAL MILIEU

Abstract

This paper looks at the cluster of phenomena that aggregates into what has been called a crisis of time, where experiences of time have become at once stretched to perpetuity and compressed to negligibility. The former results from the perceived endurance of digital media that feign everlasting memory and recall, whilst the latter is due to the speeds at which information is processed, making wait times feel intolerable. In either case, digital technologies have seemingly rendered time into something unrecognisable on a human scale.

Whilst there are several competing theories on elements that contribute to this, such literature has largely been confined to the discourse on speed, acceleration, and standardisation. What has been so far overlooked is the logic of optimisation, a mode of operation that is endemic to digitality. Optimisation, which captures aspects of digitality that exceed the scope of efficiency, is particularly insidious within the digital milieu due to the abstraction necessitated by digital processes. I analyse optimisation as it surfaces in capitalist history in the form of land privatisation and imperialism, tracing it through to the digital milieu, producing what I term "time enclosures". This term parallels the land enclosures that were the historical preconditions of capitalism in order to articulate a specific element of privatisation and commercial value in the crisis of time. Finally, I relate optimisation to the entwined values and histories of imperialism that are premised on linearity and progress to explore the thread that corrupts our sense of time through digital technology's effects on retention and protention.

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A crisis of time

There is a phenomenon, sometimes referred to as "a crisis of time", which is widely experienced in our current epoch, often summed up in the paradoxical phrase, "the more time we save, the less we have" (Rosa 16). The story behind the crisis is a familiar one, and its beginnings might go something like this: our technologically advanced society is overflowing with tools, both digital and mechanical, that allow us to do more in less time. Communicating with anyone at any distance is easy and uncomplicated. Automation technologies mean repetitive tasks are undertaken by machines so that the work left to humans may be creative, fulfilling, and rewarding. In light of this surge in technological advancement, it seemed for a moment that we may finally be lifted from the alienation caused by the state of labour, that we might find time for the pursuit of a good life beyond the socioeconomic confines of our contemporary moment (Srnicek 7).

Of course, that's not how the tale unfolds. Despite the many advances in technology in the last century, the promises of automation lie unfulfilled as its claim of emancipation from mundane work is devoured by an insatiable economic need for growth (Lovink 84). Even with all the conveniences that digital technologies offer, we're left feeling short on time, both in the cadence of the day-to-day and in the span of a lifetime in its entirety, where "life is short" remains an uncontested idiom. Equally, there is a pervasive feeling of standstill, where the experience of a perpetual present emerges from the constancy of update, a present that is not held accountable to a past and does not have a future to work towards. This paper analyses our present moment of data surplus in order to understand what is particular about digital technologies that contribute to this crisis of time.

Although time and technology have been widely studied throughout the past few decades, such literature has largely been confined to the discourse on speed, acceleration, and standardisation. This includes Stiegler's repositioning of technics as time in the exteriorisation of memory, Harvey's space-time compression where machines shrink our sense of distance and its relation to time, and theorists writing about the ways photographic and film technologies introduced new and asynchronous timelines (Solnit; Mroz). Processes of acceleration are often cited as the underlying cause of this crisis of time (Rosa 21), guiding technological evolution and proliferation. However, this does not account for the particularities of the digital, nor does it acknowledge the preconditions that enforce its singular directionality. What is missing from the equation, I argue, is the logic of optimisation, which manufactures a forward-thrust orientation that affects digital society at every level.

Optimisation, as it surfaces in the digital, emerges from the contested histories of progress and improvement to result in what I term a time enclosure, paralleling the land enclosures of medieval Europe and colonised terrain to mimic the same process of privatisation. Optimisation is inextricable from our socioeconomic realities just as it habituates end users of digital technologies to reconfigure collective experiences of time. I will thus explore how these historical instances of optimisation transmute

into the digital and investigate whether it is possible to escape the logic of optimisation in the digital milieu.

Time in the digital milieu

The sensation of time shortage, poverty, and lack, is exaggerated under the current conditions of the digital society, where time is rendered at once negligible and infinite. Time's purported negligibility is due to the incredible speeds at which information is processed such that waiting feels intolerable and instantaneity is expected (Crary), whilst its infinitude is due to the perceived perpetuity of digital media, premised on the supposed endurance of decentralised, unchanging informatics (Groys). This archive of knowledge is understood to be built on the mythical backbones of a system made to detect and withstand nuclear threats (Abbate), which promotes a quality of immutability that further feeds into the feeling of standstill. The ubiquity of digital technologies today, coupled with their innate logic of abstraction and automation, has resulted in previous theories on time and technics becoming inadequate in accounting for the particularities of the digital.

The intensification of these changes renders a time that is without presence and a present that is without time, lacking past and future. Time scales are stretched and squeezed to the point of disappearance, experienced and expressed in various ways that hint at a crisis of time, such as Berardi's study of an impotence that denies us the ability to imagine alternative futures.

To contextualise these changes, I use the term "digital milieu", as articulated by Yuk Hui in On the Existence of Digital Objects, which describes the current milieu of "multiple networks… connected together by protocols and standards" (Hui 26). The term moves from "the notion of system to the notion of the associated milieu proposed by Simondon as a response to the rampant advance of industrialization" (Ibid 221), an important distinction that captures an undercurrent of commercial value which we will see is a pretext for optimisation.

Optimisation, politically and digitally

A definition of "optimisation" must first be established before such an investigation can proceed. Optimisation is generally understood as a way to make the best use of something. This definition may initially appear benign; however, it does not hold up under scrutiny, for both the words "best" and "use" may be politically and culturally charged such that "optimisation" becomes polemical when ideas of what constitutes "best" and "use" deviates. Usefulness, as outlined in Sarah Ahmed's What's the Use?: On the Uses of Use, is a framework that is capable of shaping phenomena. Whereas what is considered to be the "best" uncontroversially deviates depending on the value system used to judge that which is under consideration, to use is to turn something into a goal-driven tool, infusing it with a purpose (Ahmed 23) or else stripping that something of subjectivity (ibid 5). The two words are tied to one

another causally, where “to use one’s faculties more is to become better at something, with betterment understood as a molding, as being shaped by function” (ibid 92). The joint directionality of the terms “best” and “use” (ibid 45) embeds a particular directional logic into optimisation, the same logic that I argue originates in the beginnings of capitalist economies and finds its current and most potent iteration in the digital.

In optimisation’s digital applications, what may appear to be a harmless way to describe processes aimed at fulfilling specific ends results in the preclusion of other frameworks through which labour, culture and history may be understood. As evident in code and software, optimisation means the qualification of code as beautiful, becoming an object of aesthetic admiration when it boasts the least number of lines of code necessary to execute a function or run a programme. As noted by Galloway: “The concept of optimization is important to algorithmic aesthetics… To optimize a system means to increase its efficiency, to eliminate redundancy, and to exploit advantages” (Galloway 324).

Optimisation, thus, shares characteristics with the concept of efficiency, where the latter is understood as achieving the most output with the least input. However, there exists a break in our moment of data surplus, within the digital milieu, where a more all-encompassing logic underlies the digital. This logic aims for longevity, hyper-synchronisation and other technical processes that include but also exceed the scope of efficiency.

The goal for digital objects within the digital milieu is thus no longer merely “more for less”, but a myriad of interrelated processes that take on the joint directional logic of optimisation’s component definition, “best” and “use”. As explained by Halpern and others, "[i]t was once the imagined limits to resources and energy that shaped industrial conceptions of efficiency, energy, and labor power. In the early twenty-first century, data capitalism changes this formula by putting the derivative before the source. Derivation takes the place of extraction, and where there was efficiency, there is now optimization" (205).

Efficiency, which takes on the logic of “least for the most”, also overlooks the prerequisites of functioning digitality; namely the abstraction necessitated by the operation of digital technologies. On a structural level, what differentiates digitality from mechanical processes is an abstraction of information into discrete units (Galloway 24). In computer science, abstraction means only relevant information from a group is derived to be used. It allows optimisation to occur in algorithmic entities to a degree that mechanical objects would not be subjected to (Kramer). When optimisation occurs on the level of code as opposed to user-facing interfaces, it is not simply the processes that become altered, but the digital object themselves, which are “objects that take shape on a screen or hide in the back end of a computer program, composed of data and metadata regulated by structures or schemas” (Hui: 1). Whilst to the user, the objects on the screen may not appear differently once the code has been optimised, their experience of the object will

change. For example, an object may be loaded faster, the metadata that specifies its origins might disappear, or the file type may change such that it becomes incompatible with certain software.

To expand on how optimisation alters digital objects due to the digital's reliance on abstraction, we might look at an example of the creation of a JPEG image file from other file types, such as RAW. To optimise such a file means to decrease its size by stripping it of certain data whilst still making it discernible and enjoyable as the image to a human viewer. The ability for a digital object made of data to be compressed is attributed to the fact that what appears to human eyes as an object on screen can be abstracted into data, understood in terms of code, and abstracted continually from computer languages that indicate how such objects should appear on screen until it reaches the level of machine language, a series of ones and zeros or hexadecimal format transmitted from one modem to another that can be recomposed into the digital object that is the desired outcome through algorithmic processes.

In order to analyse the process of optimisation in JPEG files, we must first understand how a JPEG works. JPEG functionality hinges on the human eye's lack of discernment for certain levels of detail. We have a bias towards luminance over chrominance (light/dark versus variation in colour or frequency of the light spectrum) as well as an ability to detect details with low-frequency changes over high-frequency changes in imagery. This means a large portion of any given photographic image is redundant to human observers. To take advantage of this, JPEGs go through several algorithmic transformations to eliminate excess data, including converting the colourspace into a format that allows the removal of certain colour information and converting the image into blocks to then rid the image of high-frequency information. If it were not for the JPEG's inherent attribute of being constructed through data, such files would not have the ability to essentially siphon off bytes. The reformatting of the digital object's constitution, in this case, the compression of an image such as a RAW (unprocessed) file into a JPEG file, means that although the image appears the same or similar to the human eye, the object itself is fundamentally changed. The object is thus optimised through algorithmic transformation, resulting in an object that is similar in kind but intrinsically different in its configuration.

As with all that is encapsulated within the digital milieu, the optimisation of digital objects is inextricable from the formulation of commercial value. JPEGs, for example, came about through the desire for expansion by telecom corporations (Hudson). Thus, the optimisation of the digital object is often related to the user interface, which is again linked to commercial value. Optimisation of image files, for example, occurs so that webpage loading times are faster, helping it rank higher on search engines such as Google. This ever-changing set of conventions that constitute search engine optimisation (SEO) provides pages with a better chance of being seen by internet users (Killoran). Other examples of optimisation on the level of user interface include social media optimisation, which follows black-boxed rules on what

posts will be "favoured" by the algorithm in a balance between maintaining and monetising users. Likewise, dating apps and selling platforms offer advice as a part of their service on how to make oneself appear more appealing to attract potential suitors or buyers (Degan), and optimising for "scannability" is now key to digital communications (Sutter). This feeds into the ethos of hustle culture and self-optimisation, a shared occasion amongst entrepreneur-influencers and outmoded slogans that tell us to rise and grind, of the habits of successful people that we're told to aspire to, or of the bootstraps that we should be picking ourselves up by. In each of these cases, the directionality of optimisation is indicative of commercial value, whereby profit margins are expanded through the varied processes of optimisation. This can also be observed in the commodification of time in the network society, as described by Wendy Hui Kyong Chun, who explains that "value is generated online, and networks are valuable because information has become a commodity" (117). Thus, on the level of code, user interface, and networks, "best' and "use" merge with commercial value to inform the directionality of optimisation. As Galloway says, "Ever since Marx indicted exchange value and alienation, progressive movements have looked with scepticism at the domain of abstraction and optimization" (Galloway 211).

Optimisation and industry

The digital milieu is not the first example of a paradigmatic shift in production altering our relation to time. The industrial revolution, which led to the proliferation of mechanical production, the expansion of telecommunications systems, and other technological and managerial advancements have previously led to temporal shifts that are well-documented by theorists from various disciplines. Notable theorists include economic geographer David Harvey, who analyses how the unhindered growth of capitalistic modes of production has resulted in a widespread feeling of dimensional annihilation and collapse, which he terms "space-time compression". In his outline of the history of time in the capitalist epoch, Harvey says, "the spread of adequate measures of time-keeping had much more to do with the growing concern for efficiency in production, exchange, commerce and administration" (423).

Efficiency, thus, is at the forefront of the modification in our relation to time during eras of mechanical production, spearheaded by both new managerial programmes and technological advancement. In contrast to the optimisation of the digital milieu, efficiency rests on value extraction by the incentivisation of more labour for less time (Braverman). Methods of more-for-less are thus a straightforward way to squeeze profit such that the goal of ever-increasing efficiency was adopted by labour authorities. Most conspicuously, Taylorism, otherwise known as scientific management, was one of the most successful programmes whose legacy in the restructuring of labour persists to present day. In the bid for increased productivity, Frederick Winslow Taylor designed meticulous experiments with labourers and machines to find the optimum output of goods. His efforts led to the increased division of labour, enforced regular work hours, and a system of new social relations

which championed efficiency to the detriment of the worker, who was seen as a mere cog in the productivity machine under this system. In various ways related to labour, such as the study of "the measurement of elapsed time for each component operation of a work process" (ibid 119) and the standardisation of measuring output at the end of each workday, Taylorism's alteration of our relationship to time is tied together with the aim of profit.

We see in these historical moments of temporal change the same directionality that imbues the logic of optimisation. "Best" and "use" in the shift of industry during the 18th and 19th centuries conflates with profit and material output on a mass scale, restructuring our understanding of time around the work day and divorcing our temporal logics from the social structures of pre-capitalistic society. Whilst efficiency is recast as optimisation once the relationship with commercial value exceeds managerial and labour processes, their joint directionality indicates an underlying logic that potentially predates the proliferation of industrial production. It is without a doubt that the industrial revolution shifted in our relation to time; however, the directional logic that is evident throughout those decades may be traced back elsewhere. With that in mind, I turn further back in time in an attempt to examine the beginnings of this forward-thrust directionality.

Progress, improvement, and time enclosures

The directional logic of "best" and "use" pervades our reality from the granular scale to the planetary, due in part to the far reaches of the digital milieu thanks to industrial infrastructure, yet its beginnings may be traced back before the proliferation of industry. In exploring this history, I aim to strike a parallel between the land enclosures that were crucial to the transition into capitalism and what I term time enclosures that are particular to the digital milieu. Although the term "optimisation" entered into popular lexicon fairly recently, its logic notably mimics the historical drive of progress, which informs the ideologies that have led to the desecration of peoples, cultures, and land. Progress, according to Azoulay, is "a destructive force, a movement, a condition embedded in temporal and spatial structures that in the course of a few hundred years has shaped the way we relate to the common world and narrate our modes of being together" (21). It "conditions the way world history is organized, archived, articulated, and represented" (11) such that even in the centuries after the initial violence of dispossession and plunder, the narrative often told is one that claims such actions to be ultimately justified.

Related to progress is the concept of "improvement", which offers a way to understand the histories tied to land and primitive accumulation of capital, as a forebear of present-day neoliberalism. Improvement is a "working towards" that denotes both motion and direction, similar to optimisation. Historically, this term comes up in documentation about land improvement, a process of privatisation that might find synonymous threads in land developments of today. Improvement is also one of the pillars of Locke's theory of property, which has been rebuked for its justification of English settler colonialism (Arneil).

The transition into the new economic system from the largely agrarian labour force of Feudalism towards waged industrial labour involved centuries of direct and indirect violence and bloodshed in order to set the stage for what Marx termed the "historical preconditions" of capitalism. According to economic historian Michael Perelman, the classical political economists of the 17th to early 19th century "understood that market society required strong measures in order to coerce large numbers of people to join the market revolution" (Perelman). Amongst other losses, these "strong measures" resulted in the loss of land access, where communal land had to be eliminated as a way to incentivise wage labour and where if peasants and labourers had any land to their names, it was only to subsidise what meagre living they earned. As 19th-century Scottish reformer Robert Gourlay once wrote, "It is not the intention to make labourers professional gardeners or farmers! It is intended to confine them to bare convenience" (ibid).

Land improvement surfaces here in two ways: in the initial changing of wild landscape into arable land, and in the enclosure and privatisation of land. The disintegration of common land contributed to drastic changes across agriculture and industry, where "enclosure changed agricultural practices which had operated under systems of cooperation in communally administered landholdings… between 1750 and 1830 in England more than 4,000 enclosure Acts were passed. The process continued through the 19th cent. until there were hardly any open fields remaining." (Cannon). In the years to come, enclosures at new speeds began to take place as value extraction became understood through the aspect of time management. "While enclosure was a long-standing rural practice, it began to take on a qualitatively different scale and scope. Not only did the pace of enclosure, in many parts of England, begin to accelerate, but also it was often undertaken without agreement." (Blomley)

While enclosures are an event of centuries past, their legacy of improvement and progress remains such that we might consider enclosures as an adequate term to describe the processes that surface in relation to the crisis of time, where privatisation of time in the digital milieu to extract commercial value parallels the privatisation of space that occurs in the histories of land improvement and enclosures. Consider, for example, the attention economy, a direct transgressor in this privatisation of time, whereby every moment is a moment to be capitalised upon, from which tech and media companies aim to extract value through collecting data or showing a constant barrage of advertisements. Similarly, the gig economy is also an instance of this insidious privatisation, whereby the precarity faced by workers habituates them into necessarily offering their time to the whims of commerce at all hours and seasons. On the level of software, the transition from ownership to subscription models of usage also reinforces this idea of privatisation within the digital milieu, where your time of access is dependent on the continual payments to SaaS (Software as a Service) tools.

I term this particular conflation of temporal loss through privatisation and technological evolution time enclosures in order to evoke the historical socioeconomic modes of operation that lead to those of our current lived reality to offer a framework through which the crisis of time may be analysed. Time enclosures speak specifically to issues of property, value, and privatisation in relation to optimisation and progress, and it is within the digital milieu that such enclosures may occur, where our relations with one another are palpably more than spatial. Progress, thus, spurs towards a singular direction to first enclose land (space), before seeping into the digital, which exceeds the dimension of space and into the realm of time.

Imperial temporality

Under the dominion of progress, colonial expansion was part and parcel with the privatisation of land. Whilst most former colonies have transitioned into neocolonial or post-colonial relations with their oppressors, the legacy of Western colonialism exists to this day in less and more obvious ways. To understand how this legacy surfaces, I turn again to Ariella Aisha Azoulay, who has articulated how progress might be understood through the lens of history as a destructive force which promulgates an imperial temporality. Here, we might understand temporality not in the minute day-to-day habits and affairs of individuals, but rather temporality as the tides of history. The lasting consequences of imperial temporality include relegating certain histories to a past that has been shut away, chapters that are not to be reopened to effectively disallow certain individuals and cultures to reenter the present as dynamic and changeable (Azoulay 78). Related to digital technology and its milieu, we might be reminded of the way in which digital objects must structurally be consigned to strict categorisation in order to be called upon and used by algorithmic processes.

Imperial temporality disallows movement in any way but forward, and the events of yesterday are accepted to have been done for the sake of progress and an assumed moral objectivity. Imperial temporality is the phenomenon through which "the violent processes of impoverishing and dispossessing people… are obscured by the ideology that poverty is… an attribute of such people", where "the violent imposition of resource monopoly is converted into the allegedly beneficent and necessary regime of law and order" (ibid 77). This temporality, thus, follows the "imperial movement of progress", a linear motion that denies those outside of Western sovereignty the opportunity to reopen their histories, pronouncing certain cultures an event of the past that has had its final chapter.

For Azoulay, to undo imperial temporality, one must rid the bookends of colonialism as a stark beginning and end to instead focus on the operators of colonialism that persist into the present. These bookends can also be understood as time enclosures of a larger scale, similar to the time enclosures particular to the digital milieu, enclosing on histories to mutate them into objects that may be collected and

categorised. And like digital time enclosures, the entanglement of commercial value, cultural memory and exploitation of labour results in this enclosure that reaches across histories. The operators, and thus the forces that maintain these colonial bookends, include cultural institutions such as museums and archives, which continue to sustain particular narratives of what belongs to history and what is a living culture (ibid 88).

The artefacts stolen or traded from their original contexts to be placed behind glass and cut off from the flow of history enclose the chapters of past cultures such that the narrative of progress by any means necessary is all that remains. It exemplifies the particular telos of progress that disallows the possibility of alternative socioeconomic landscapes or imaginaries where, after Mark Fisher, Fredric Jameson and Slavoj Žižek, it's easier to imagine the end of the world than the end of capitalism (Fisher 2). And it's this thread that we see surface as optimisation in the digital milieu.

Tertiary protention and the experience of optimisation

Carried forth into the current era of computational capitalism, imperial temporality continues to permeate the logic of digital technologies and media at every level, whereby the only trajectory possible is forward, however that can be achieved. Progress transforms into optimisation under the primacy of the digital so that the same logic weaving through imperialism informs how technologies evolve, where an imperial temporality both sustains and is sustained by the digital milieu. This is done so through the aim of progress, a contrived movement in the direction of a purported "best". The digital confronts this directionality with the quality of "use" because digitality came about as a tool, built for purpose before its ubiquity enforced reliance on them. In the same instance, the digital uses its users to extract further value in the form of data and advertisement. It's not for nothing that individuals of the digital milieu are often referred to as "users".

Optimisation in digital technology also means the ability to retain information and anticipate future instances. The retention of information is exemplified by the internet as a source of information, a global aggregate archive that may be accessed with the right combination of hardware and software. The anticipation of the future is key to risk management and data analytics, a troubling subset of digital media that has led to socioeconomic and racial injustices (Chun 58). This is especially relevant when we consider the advances in digital technologies as the volume and quality of predictive and generative AI increase. In considering the implications of such technologies on experiences of time, I look to the concept of tertiary protention to better understand how futurity and digitality are entangled.

Protention is the anticipation of the next moment in phenomenology, coined by Edmund Husserl, in contrast to retention as the mechanism of memory. As explained by Yuk Hui, there are primary and secondary protentions, "the primary protention being the anticipation of the immediate coming moment… and the secondary

protention being anticipation or expectation based on past experience" (Hui 221). Because of our reliance on technology, especially digital technologies through which our communications are mediated, Hui proposes a third type of protention.

The tertiary protention, according to Yuk Hui, refers to how "in our everyday lives, technology becomes a significant function of the imagination" (Hui 221). This is heavily influenced by and contrasted with Bernard Stiegler's tertiary retention, a designation of technology as the exteriorisation of memory (ibid 222). In today's society, digital technologies more than habituate their users to become the very means by which time is experienced. The passing of time through swipes and updates coupled with the hypersychronisation of networks, which ironically allows for asynchronous communications such as instant messaging, all contribute to the ways in which we relate to time. Under the logic of optimisation, it is not farfetched to propose the possibility that our collective imaginations are guided directionally towards an undetermined goal, that of "best" and "use", as with all actions in digital processes.

The optimisation of digital technologies means imagination becomes subject to an exterior mechanism that constantly reforms for the sake of lighter digital loads, more efficient processes or immutable data structures with the pulse of commercial value surging through each. The introduction of predictive and generative machine learning leads to further complications where the effects of technology exceed the processes and build of machines towards a territory where our imaginations are entirely subject to the functionality and the corresponding outputs of these technologies, and "in terms of the logical capacities and operations of machines" (ibid 223).

Tertiary protention considers the use of data analysis for statistical predictions, activating digital objects from the purview of retention through algorithmic processes. Examples abound in today's society, from the automated coffee machine that Hui uses to illustrate this, whereby the machine anticipates that at a certain time, you'll want a cup of coffee (ibid 240), to the large language models that provide viable routines for those who are after specific diets or bodily results. With optimisation, digital processes mimic seamlessness so that tertiary protention is increasingly difficult to detect, thus difficult to refute. Tertiary protention in terms of scale means both the ability to recall information thanks to artificial, exteriorised retention and the immediacy of output through the incredible speeds of external processing feed into the altered experiences of time. Time is thus enclosed through the perpetuity of the present that disallows other futures and through time's negligibility, where the next moment is always already here. Privatised, optimised, and enclosed, time in the digital milieu ceases to flow with the tempo of experience, running counter to circadian cycles and diurnal rhythms and the metronome of care beyond the scope of commodity, scaling beyond human temporalities and amplifying the crisis of time.

Minor tech and optimisation

How might the logic of optimisation be countered, and is it something that can be abandoned whilst digital technologies remain an inextricable part of our everyday lives? Whilst I cannot provide a definitive answer that will ease the effects of or else mitigate the crisis of time in the digital milieu, I want to offer a few examples of digital projects that rethink the logic of optimisation. One such project, contrary to the aesthetics of algorithms that aim for efficiency and fewer lines of code, is Winnie Soon and Geoff Cox's Aesthetic Programming, a handbook which rethinks methods of "learning to program as a way to understand and question existing technological objects and paradigms, and to explore the potential for reprogramming wider eco-socio-technical systems". It has the potential to mitigate the directional logic of computational thinking that habituates learners of programming, instead galvanising critical thinking in its stead. Artist Ben Grosser also provides tongue-in-cheek responses and examples of minor tech that could counter the issue of scale in the crisis of time. His project Minus is a finite social media network where users are given 100 posts for life, counter to the optimisation of other social media platforms which subsist on maximising value extraction through the most number of users. He also wrote on Twitter, "my new chat AI, called Enough, is a small language model that draws on a one-parameter pre-trained corpus—the smallest in history—and answers every question with the same response: 'No.'"

Minor tech, thus, holds the potential to resist the uncontested trajectory of optimisation. It opts not for commercial value, to do and reach the most in the least amount of time, but to provide another pathway into the digital. These projects don't promise to reconfigure our entire relationship with the digital and its logic of optimisation, nor do they attempt to redress the enclosure of time, but what they offer, instead, are ways to re-enter the digital milieu with fresh concepts that are not built on the temporalities of old, nor its preexisting logic of progress, goal-orientation and directions. Although they act as small instances of refusal, their very presence indicates the possibility of alternative modes of being and a fissure that may be pried open in order to reclaim digitality as a method of resistance.

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