Zayn Shafiuddin
Student ID: 23028590
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This is an experimental essay, the threads can be loose at first but they do come together concisely towards the end

THE FUTURE SHOULD BE *LESS* DIGITAL – THE FUTURE OF HUMAN WEARABLES SHOULD BE ANALOGUE

Introduction

The expansive microcontroller industry in Taiwan has made it cheap to to digitise too many consumer products that don't really benefit the user—rather prioritise pleasure and short term comfort (Lin, 2024). The zeitgeist now expects it. To live normally—to not be outcast—you need a smartphone. Following along this trajectory, you'll need more: smart vehicles, smart home appliances, smart socks perhaps. "The arrival of Internet of Things (IoT) overcomes limitations of time and space by providing ubiquitous accessibility of its products" (Weiser, 1991).

Lilly writes noise as fundamental to perception of raw data—the brain's baseline static upon which patterns are projected and meaning is then constructed. Drugs, within his model: function as inputted disruptors to these noise patterns, altering the substrate upon which we project reality—this same concept applies to all consumable things. This framework extends to bodily augmentation: any technological intervention that modifies sensory input or cognitive processing necessarily alters the noise floor of perception. The subsequent projections—our constructed reality—are potentially dangerous, built on an artificially modified foundation.

You are what you eat, you could say.

Technology, in this sense, operates pharmacologically. McLuhan's observation that "the medium is the message" (McLuhan, 1964) implies that technologies are active shapers of perception—grooving deeper as extensions of the nervous system that restructure how we process the world.

The smartphone & IoT ecosystem is a transhumanist drug.

The implications of dramatically increasing brain processing power through technological intervention are highly perceptual as we would be projecting onto noise patterns we did not evolve to interpret.

Contemporary product design is progressively and aggressively shifting away from the "form follows function" pipeline which generates tool-oriented products to experience-first products (Lin, 2024). These overly curated experiences overcompensate and produce diminishing returns for the end user. This trend involves the cumulatively microscopic embedding of complex features and advanced digital data harvesting deep into once-ordinary household or personal objects that were traditionally analogue. This orchestrated destruction of simple living is our future of digital augmentation (Lin, 2024).

These experience-oriented products exist in two layers: the physical object you hold, and the hidden digital infrastructure it is built upon on—concealed data processing, constant connectivity to corporate servers, proprietary software that can be altered remotely without your consent. modern digital technology by nature does not allow for user ownership and autonomy, you are granted conditional access to it only.

Essentially this system claims to be forward-facing, stepping towards a utopian future where corporate-motivated self-enhancement and technologically inflicted nano-level infusion between man

and machine confuses the traditional dualistic separation between the natural self we identify with and the developed systems we create. This system regenerates and regulates itself and self optimises. Habermas describes it as enveloping "all planes of reality" (Habermas)—a monster-machine that expands by its own logic. This system ensures its own survival by reducing humans to "engineered products and mere cogs in the social machine" (Kaczynski, 1995, p. 3), thereby depriving people of their dignity and autonomy.

Fictional interpretations of this trajectory illustrate contempt for the biological. In the cyberpunk genre-defining novel *Neuromancer*, the mega-corporate elite's stance on the body was that it's merely "meat" and cyberspace offered "bodiless exultation"—only that if denied access, one "falls back into the prison of their own flesh" (Gibson, 1984, p. 5).

Figure 1: American poverty victim wearing a Meta/Facebook virtual reality headset in meme format circa 2020

Primary Example of How This Manifests

During a visit to Bangkok in January 2026 I conducted some ethnographic fieldwork, involving immersion within a culture or environment over a period of time. Walking the city and photographing infrastructure compiled my understanding of how Bangkok as a case study for a cyberpunk-esque city is relevant for this essay exploration.

Bangkok presents itself without pretence, the billboards are the largest I have encountered—not hidden behind a curated façade but displayed as one of the dominant visual components of the city. This is hypercapitalism without the Western packaging of consumer experience design. There is no softening, no "lifestyle brand" mediation between advertisement and viewer.

Figure 2: Primary research, Photo by Zayn, Central Bangkok billboard on an abandoned apartment tower, Jan 2026

This honesty is instructive but also devastating, Thailand exists as intermediary in global technological flows—receiving innovations developed abroad without the cultural infrastructure that generated those systems. The MRT elevated rail system cuts through the city with brutalist pragmatism. European cities would not permit such a structure because they possess cultural mechanisms for integrating technology at human scale since they were the initial innovators of such industrialised technology. Germany's systematic culture might produce similar infrastructure but would embed it within refined aesthetic and social frameworks developed over generations.

Thailand's position—caught between Eastern traditionalism and Western innovation ideology, recipient rather than author of technological systems—produces a cyberpunk condition. The dystopian city is not a future warning but a present reality for societies that receive technology faster than they can develop cultural responses to it. The honesty is not a virtue but the absence of alternatives, of coddle culture & exit routes. This produces either acceptance or defeat.

Ted Kaczynski's framework would read Bangkok as the technological system without its Western mask. In *Industrial Society and Its Future*, he argues that modern societies develop psychological techniques—education, entertainment, therapeutic culture—to make technological domination palatable, to give people the feeling of freedom while their actual autonomy erodes (Kaczynski, 1995, p. 8). Western consumer capitalism wraps itself in "lifestyle" branding precisely to obscure this. Bangkok, as a recipient rather than author of technological systems, lacks these engineered anaes-

thetics. The billboards are not curated into an "experience" instead they are commands. Kaczynski would argue that this is not a failure of Thai development but an honest exposure of what the system is everywhere: infrastructure that reshapes human environments to serve technological requirements, not human needs (Kaczynski, 1995). Is this not a cyborg trajectory. The absence of alternatives: since the binary of acceptance or defeat is exactly his point about the system's totalising nature. There is no outside. Thailand did not choose this trajectory; it is victim to it. The cyberpunk condition is not Thai failure but technological colonisation operating without the courtesy of disguise.

Figure 3: Primary research, Photo by Zayn, Bangkok commercial complex, Jan 2026

The distinction between Eastern and Western technological development is deeply philosophical. Western innovation culture operates on a trajectory-first model: envision the dream, then reverse-engineer the path. This produces rapid advancement but leaves infrastructural and cultural gaps that must be addressed retroactively—often poorly. Eastern development, particularly Japanese *monozukuri* (craftsmanship philosophy), proceeds layer by layer: each system is refined to a high level of completion before the next is introduced. This philosophy of incremental perfection, known as kaizen, contrasts with Western innovation's tendency toward radical paradigm shifts (Imai, 1986). This approach appears slower but produces stability, certainty and understanding. The foundation supports the structure because the foundation was completed and understood first.

This is visible in manufacturing lineage. Japanese electronics industries developed through decades of their own systematic refinement—tube amplifier, Walkmans, then optical media, afterwards into miniaturised computing—each generation building materially and epistemologically over the previous. Western tech industries, by contrast, frequently abandon infrastructural investments mid-development in pursuit of the next paradigm shift. The result is a tech landscape littered with abandoned standards, incompatible systems, and technological debt. McKinsey estimates that technical debt may represent up to 40% of the technology estate in large enterprises (Monaghan & Bass, 2020). This fragmentation reflects what Weiser called the challenge of ubiquitous computing—

technology that disappears into the fabric of daily life yet leaves behind infrastructural complexity (Weiser, 1991).

Applied to wearables, this brutalist implementation of technology becomes quite strange. Infrastructure brutalism—the Bangkok MRT, Soviet housing blocks—can be appreciated for its honesty, its inability to pretend. But when the same logic applies to objects worn on the body, only a technocrat could appreciate that. European design traditions would integrate the same functionality within refined aesthetic frameworks developed over centuries. German transport design is systematic but also considered, embedded in cultural expectations about how public infrastructure should feel. Thai infrastructure lacks that embedding—not because Thai culture is inferior, but because the technology arrived faster than the cultural frameworks needed to absorb it.

Japan and Thailand both received Western technology, but their responses differ. Japan's cultural infrastructure—minimalist, systematic, rooted in Shinto and Zen aesthetics—was already compatible with refined technological integration. Thailand's aesthetic traditions are maximalist, rooted in Hindu-derived ornamentation that predates its Buddhist conversion. Southeast Asia has historically been part of the "Indosphere" (Matisoff, 2003, pp. 6–7), with Thai temple architecture reflecting the integration of Hindu cosmological concepts, Brahmanical deities, and ornate decorative traditions that persisted after Buddhist conversion (Noobanjong, 2024). Thai Buddhist temples are among the most ornate in the world, while Japanese temples tend toward austere simplicity. This is a difference in what each culture's visual grammar can easily absorb. Japanese minimalism provides a framework for integrating technology elegantly. Thai maximalism doesn't—so technology sits on top of the culture rather than within it.

Western and Eastern cultures imagine the future differently. Western culture dreams big—envisions a destination, then reverse-engineers the path. *Blade Runner*, Utopia, *Black Mirror*: these are Western warnings, depicting futures we're building whether we mean to or not. Eastern philosophy, particularly Japanese, works differently. The Japanese say to tork with what's in front of you. Refine each this layer before adding the next, and don't dream of the destination—attend to the process. This produces slower progress but more stable foundations.

The argument for analogue technology is ultimately an argument for pace and peace. It allows culture to catch up. In a globalised world, technology developed in Silicon Valley arrives in Bangkok, in Lagos, in rural Indonesia and places with completely different relationships to futurism and progress. The shock is that these technological systems are being imposed faster than all cultures can develop responses to them. Analogue technology, being comprehensible and independently repairable, gives communities time to integrate rather than simply receive.

The ever-marching development of science and technology is fundamentally allied with the creed of liberalism—the promise of increased individual choice (Habermas, 2003). "Technophiles" are "hopelessly naive" or "self-deceiving" in claiming that science will "fix all that! We will conquer famine, eliminate psychological suffering, make everybody healthy and happy!"

The terminal flaw in this pursuit is that progress progresses blindly. Trajectory is not considered, and so "the impact of unforeseen technology on the human species is precarious. The imperativeness of emerging technology requires critique and caution" (Kaczynski, 1995). Else we create divides so wide and which cut so deep that we will fragment as a species by culture and class. Which is more violent.

Eugenic optimisation would materialise via markets of preferential demands: biotech research is almost wholly conducted with investors' interests and relies on capital markets for funding (Habermas, 2003). The aims of bodily augmentation and "self-enhancement" match up with the desired produce of positive eugenics—promoting the proliferation of "good stock" according to parental wishes.

The Biocomputer

The underlying concept driving this digital self is as John C. Lilly describes: "each mammalian brain functions as a computer, defined by complex properties, programs, and metaprograms" (Lilly, 1972).

The general-purpose human biocomputer (brain) contains at least "13 billion active elements" and almost 100 billion neurons. To compare, modern CPUs contain a similar number of transistors, however the efficiency and interconnectedness is unmatched when against nature's biocomputer—which is hypothesised to possess inherent properties for self-programming or "metaprogramming" based on this neuroplastic network. The ambition of Lilly's model is the unveiling of foundational mechanisms and systems "metaprograms" that administrate the creative acts of the human biocomputer's basic programs.

How this metaphoric framework underpins the digital self

This computational metaphor for the human brain as a computer directly reduces the human body from an embodied subjectivity into a deterministic machine. Through this lens, the body becomes a continuous producer of data that feeds hungry systems (Lin, 2024).

This is physically demonstrated in many IoT devices that are parasitic in their relationship with their owner, such as the "Nutristicks" which function using a spectrometer to detect nutritional values in a user's food intake and subsequently track and export the user's nutritional data to proprietary cloud servers (Lin, 2024). The fact that this is so normalised enables continuous tracking from technophiles in power and mega-corps with an agenda.

Another word of warning from *Neuromancer*: "Construct"—the ROM character/personality—mirrors this idea of the data-centric identity (Gibson, 1984, p. 63). The supposed final goal in this computational reality perspective is the attainment of optimal computational efficiency reprogramming, by the collective self within a neglected material reality (Lilly, 1972). For such an agenda to slip through the apparent humanist zeitgeist suggests a sly ascendancy of figures whose priorities have been abstracted by systems logic to the point that the impact on human quality of life is treated as negligible.

Lilly's framework suggests that pushing the boundaries of self-awareness risks making individuals overly conscious of their own metaprograms—the underlying systems that govern thought and behaviour. This heightened awareness is anxiety-inducing; it destabilises the automatic processes we rely on to function. In extreme cases, it produces psychosis: the system observing itself into dysfunction. This has implications for the modern world of IoT, smartphones, and constant connectivity. These technologies function as mass hypnosis—not through explicit control but through the continuous occupation of attention and the subtle reprogramming of behavioural patterns. In developing nations, one observes that these imported technologies arrive as alien systems, disconnected from local cultural infrastructure. The metaprogrammatic shock is unmediated. This exacerbates class divide: those with existing frameworks for integrating technological complexity adapt; those without are overwhelmed. The liberal forces of technological expansion operate without the control systems necessary for safe absorption.

Footnote: Lilly proposes in Chapter 9 that LSD-25 could facilitate safe integration of disruptive experiences by enabling positive reinforcement and inhibiting negative punishment systems in the central nervous system (Lilly, 1972, p. 86). The modern technological world constitutes precisely such a disruptive experience—a shocking addition to the CNS that most human nervous systems did not evolve to process. Under this logic, LSD functions as noise therapy: a controlled disruption that allows the system to recalibrate, to develop new metaprograms capable of integrating novel inputs without destabilisation. The accelerated self-development Lilly describes—feedback programming through deliberate noise manipulation—offers a potential framework for adapting to technological complexity at human pace rather than market pace. This is speculative, but the underlying principle is sound: safe integration requires mechanisms for the nervous system to process and pattern new inputs, not merely receive them.

Critiques

On autonomy and instrumentalisation of the human

Habermas argues that genetic intervention, particularly when non-therapeutic and used to shape preferences in offspring descendants, exercises a form of control that compromises human autonomy. Habermas demands that such instrumentalising of the human must only be directed toward "things, not persons" (Habermas, 2005). The current advancement of genetic engineering already threatens erasure of the deeply ingrained distinction between the "naturally grown and the technologically made" and propels humanity to a prescribed non-dualistic default. Having a haploid set subjected to genetic programming introduces an "irreversible paternalism" which prevents the subordinate person from maintaining a "spontaneous self-perception" from being the undisputed owner of one's life (Habermas, 2005).

Frieder Nake argues that the fetishisation of computing has been propagating the loss of human communication (Nake, 1971). The industrial-technological system "does not and cannot exist to satisfy human needs"—what happens instead is the human moulds itself around the abstracted terrain of the social system's requirements. This compulsion towards satisfying technological requirements is prescribed by "technical necessity" surpassing adjacent political or social ideologies such as capitalism or socialism (Kaczynski, 1995). Science and technology strengthen the system whilst bringing upon a massively destructive lack of individual freedom and autonomy.

Controlling the human masses includes psychologically prescribed methods masked as education or rehabilitation programmes for "mental health recovery." This authoritative control is presented in a rational manner, curated in easy-to-follow instructions and often within the guise of philanthropic motives which include the proposed reduction of crime, but inevitably results in metaprogramming a default human mind. The radical and generally unaccepted truth is that "freedom and technological progress are fundamentally incompatible" within this current system (Kaczynski, 1995, p.15).

Actually, Analogue is Good

Architecture serves as a powerful analogue visual standard precisely because structural engineering is often exposed—good architecture embeds structure into honest visual design rather than concealing it. This honest, exposed design is brutalist in character. The beauty of brutalism lies in its coherence with function: structural honesty is comprehensible and minimalist, but not visually minimalist. Visual minimalism—International Style architecture—carries unrelated problems: difficulty to maintain, aesthetic incompatibility with natural environments, sterility, uninspiration. Brutalism is reductionist in a different sense. You can see that it was designed by breaking the problem down into its simplest constituent parts. That process is partly what makes it beautiful. It is simple because it was simplified.

Neo-Luddism opposes modern technological progress through a similar impulse—both frameworks advocate for scraping away complexity to reveal what remains essential. Both critique mass technological society. However, the Neo-Luddite Manifesto (Glendinning, 1990) rejects a purely reductionist worldview as cold and overly focused on efficiency. This tension is apparent in the Bangkok MRT Skytrain: brutalist reduction applied without holistic consideration produces alienation rather than clarity. Neo-Luddism is often described as a holistic philosophy. It argues that by being too logical—by reducing too completely—we lose the soul and interconnectedness of human experience. The reductionist method is valuable for designing systems; it becomes dangerous when it determines how we live within them.

Figure 4: Primary research, Photo by Zayn, Bangkok MRT Skytrain infrastructure, Jan 2026

Japanese software development is frequently criticised in Western discourse as conservative or outdated. This criticism misunderstands the underlying design philosophy. Japanese software prioritises stability, documentation adherence, and predictable behaviour. The Sony PS3 XMB (Xross-MediaBar) interface exemplifies this: elegant, consistent, comprehensible at human scale. Every interaction behaves as expected. The system communicates its logic transparently.

Figure 5: Sony's PS3 XMB (Sony, 2006)

Western software culture, shaped by venture capital cycles and disruption ideology, rewards nov-

elty over reliability. The result is software ecosystems where every developer reinvents conventions, where documentation is treated as optional, where "breaking changes" are normalised. This produces occasional genius—genuine innovation emerges from experimentation—but also produces instability, user confusion, and planned obsolescence via complexity.

Japan's recent trend of hiring Western software engineers represents not an admission of inferiority but a pragmatic response to market pressure. The global software economy rewards speed over stability. Japanese companies are adapting to compete, not because their approach was wrong but because the game's rules favour a different strategy. If the metric were longevity, maintainability, or user comprehension, the evaluation would reverse, this was the case in the 90s, but times have changed.

Grounding sensory experience over digital abstraction

The sensory experience of IoT products often misses the mark due to development prioritising technological indulgence within both hardware and software, with an eye on profits over the holistic human experience of the product (Lin, 2024).

IoT products induce unnecessary overcomplexity and introduce distributed embedded functionality within concealed networks which raise significant concerns regarding user privacy and data security. Pure aesthetic pleasure in products must be "embedded within interactions, actions, and perceptions, demanding an awareness of the physical and embodied self" (Lin, 2021).

Lin says the design imperative must shift from optimisation and efficiency towards attunement in emotional and societal values. This requires the generous integration of "hedonic qualities" that increases intentional pleasurability based in the physical realm—going beyond mere utilitarian function (Lin, 2024). Research claims that traditional analogue wristwatches are more successful than smartwatches in desirability and stylistic pleasure. This suggests that the non-digital object inherently communicates aesthetic value linked to identity via socio-psychological pleasure (Lin, Sommer & Ahmed-Kristensen, 2021, p. 400).

A proposed trajectory shift within product design requires product experiences to integrate "eudaimonic elements" which embed harmonious allocations of interactive pleasure with long-term value, endearment, and sustainability (Mekler & Hornbæk, 2016).

Analogue wearables—open, comprehensible, and human-scale as counter-technologies

Ian Davis lost four fingers in a workplace accident in 2018. Insurance denied him a prosthetic. The medical system—optimised for billing codes and investor-backed biomimicry—had no pathway for a partial-hand amputee who needed to return to work. So he built his own.

What Davis created through Missing Parts Club is not a replication of the human hand mechanics emulated via motors, instead it is a body-powered mechanical system that extends his remaining capabilities rather than simulating lost ones. The design philosophy is brutalist in the truest sense. Each finger operates through a tendon-and-linkage system—cables running through 3D-printed phalanges, actuated by wrist movement, returned by springs. There are no batteries. There are no motors, no firmware updates and no proprietary cloud servers tracking grip patterns for "feedback". The mechanism is exposed, comprehensible, repairable. You can see how it works by looking at it. This is structural honesty applied to the body.
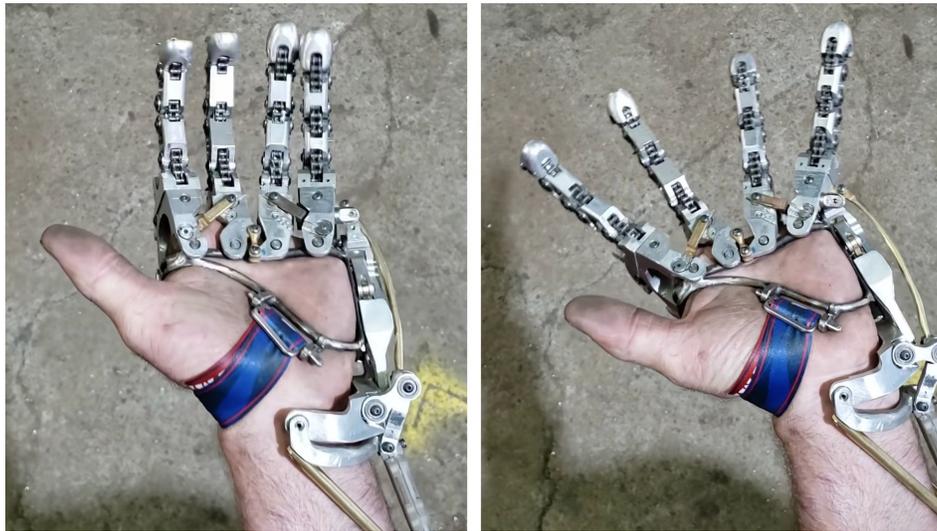
Figure 6: Ian Davis's self-built mechanical hand (Davis, 2018–2026)

The genius of Davis's approach is that it treats the prosthetic not as a replacement limb but as a tool—and tools should be legible to their users. When he flexes his wrist, cables tighten, fingers close. He feels the resistance directly through the mechanical linkage. This is not abstracted control mediated by sensors and algorithms; it is immediate proprioceptive feedback. The device becomes an extension of his nervous system in a way that electronic prosthetics cannot achieve. Users of body-powered systems often describe something approaching phantom limb integration—not because the device tricks the brain into believing the hand is real, but because the sensory feedback loop is continuous and unmediated. You feel what the fingers feel. The noise floor of perception, to use Lilly's framework, remains coherent because the input is mechanical rather than digital.

Compare this to the current state of commercial myoelectric prosthetics. These devices read muscle signals through surface electrodes, process them through onboard computers, and actuate motors that close pre-programmed grip patterns. The movement is slow—visibly, frustratingly slow. There is latency between intention and action. The feedback is absent; users must watch their prosthetic hand to know whether it has gripped an object because the device provides no tactile information. These systems cost tens of thousands of dollars (Mohebbian et al., 2021), require specialist calibration, fail when wet or dirty, and cannot be repaired by the user. When the battery dies, so does the hand. When the firmware glitches, the user waits for a technician. This is dependency designed into the body itself.

The defenders of electronic prosthetics point to programmable grip patterns, powered force, and aesthetic biomimicry. But these features serve investor narratives more than user needs. The research pipeline that produces these devices is funded by venture capital and insurance reimbursement structures—it optimises for what can be patented and sold, not for what enables human autonomy. The result is prosthetics that look impressive in demonstration videos and fail in workshop conditions. Davis's mechanical hands, by contrast, can be dunked in water, dropped, covered in sawdust, and repaired with a screwdriver. They are designed for life as it is actually lived.

This is the counter-technological position made physical. Davis did not reject technology—he rejected the trajectory of technology that prioritises complexity, dependency, and planned obsolescence. His prosthetics embody the Japanese layer-by-layer philosophy: each component is refined to do one thing well, the system is comprehensible at human scale, and the user maintains authority over their own tool. There is no network or subscription model to be absorbed into. There is no external authority deciding when the hand should be updated or deprecated. The device belongs fully to the person who wears it and without conditions.

Conclusion

Lilly's Chapter 10 reflects on coalition structures resembling insect-like communities—collective organisations where individual autonomy is absorbed into systemic function. Bangkok demonstrates this visually in a certain way: the city operates as a hive, individuals navigating predetermined pathways through infrastructure designed for throughput rather than habitation. Jared Diamond's *The Third Chimpanzee* (1991) observes that like marries like—humans sort themselves into compatible groups across multiple dimensions. This sorting, accelerated by technological stratification, reinforces separation. The class divide produced by differential technological access is increasingly biological in its implications (Diamond). One half of the first world moves toward technocratic integration and the other half retreats toward naturalism. These populations will increasingly become incompatible with each other: different noise floors and different perceptual realities. Diamond warns of conditions that produce species fragmentation. We may be engineering such conditions—not through geographic isolation but through technological divergence.

By rejecting the instrumentalisation of human life, we protect our willed, structured way of living which relies on our self-understanding as autonomous beings with free choice (Habermas, 2005). Ian Davis demonstrates this free choice in practice: faced with a system that denied him agency over his own body, he built an alternative. Not a rejection of technology, but a rejection of technological dependency. Counter-technology rather than anti-technology.

Practice-led research in this domain would help determine where people stand relative to human scale. For practice-led research, the conclusion is the designated space to reflect on the implications of current findings for future practice directions. Future research must urgently address the lack of human-scale understanding in design by moving beyond individual utility toward the complexities of interactions involving multiple objects and multiple people (Lin, 2024).

The argument for analogue, human-scale technology is ultimately an argument for pace and peace. The Japanese model—detail-oriented, layer-by-layer, documentation-adherent—is slower. It generates less capital in shorter timeframes. It provides fewer opportunities for disruptive fortunes and by that definition is less violent in essense. Within late-stage capitalism's logic, it may appear inefficient.

But efficiency toward what? The Western model's velocity produces technological debt, cultural displacement, and machines that outpace human comprehension. The excitement of rapid innovation masks the instability it generates. At a certain threshold, the responsible position is a deceleration of building foundations before structures, ensuring cultural absorption before the next paradigm shift, prioritising comprehensibility over capability.

I wouldn't say this is conservatism but instead preservation—of autonomy and of human-scale understanding. Maintaining the right to repair and control the machines we inhabit within and use. The slower path is not inferior, it is more human.

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