

Stratified Relics: Retrofuturism as a Periodic Critical Archive of Technological Promise

Abstract

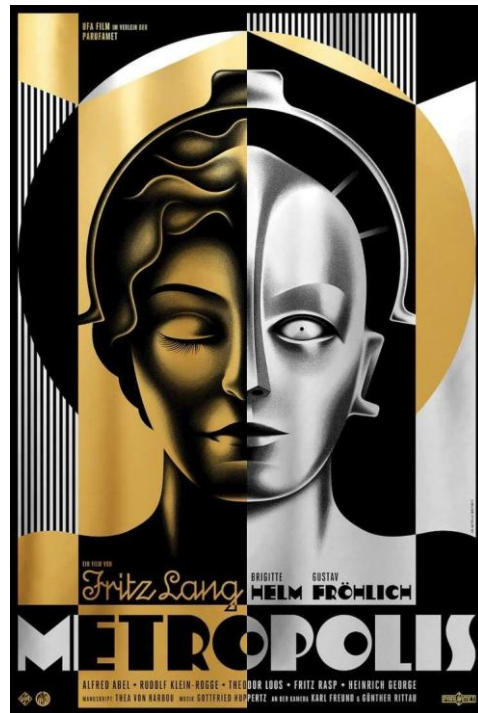
Focusing on the theme of “time, memory, and the archive,” this paper investigates how retrofuturist works, exemplified by Fritz Lang’s seminal silent film *Metropolis* (1927) and the sprawling post-apocalyptic video game series *Fallout*, constitute a “stratified critical archive.” This archive does not merely document past visions of the future but systematically records the recurring, dialectical cycle of techno-utopian promises and their subsequent disillusionment. It posits that retrofuturism follows an identifiable historical pattern of “the generation and collapse of technological promises”: each major wave of technological and social revolution—from the electrification and mechanization of the early 20th century to the atomic anxieties of the Cold War—first spawns a corpus of utopian visions (an archive of optimism), which are inevitably critiqued, subverted, and mourned by later dystopian counternarratives. By employing the theoretical frameworks of Media Archaeology and Sociotechnical Imaginaries, this paper conducts a comparative analysis of these two foundational texts from distinct



technological epochs. It argues that retrofuturism is a vital form of cultural praxis that performs a critical diagnosis of the dominant, linear narrative of technological progress. Through the aesthetic contemplation of “future ruins”—whether the social ruin embedded in a glittering city or the literal radioactive wasteland—retrofuturism preserves marginalized historical perspectives and keeps alive the imaginative possibilities of alternative paths not taken, offering a crucial lens through which to scrutinize present and emerging technological paradigms.

Introduction

In our contemporary moment, characterized by the dizzying, exponential pace of technological change—where artificial intelligence algorithms reshape labor and creativity, genetic engineering redraws the boundaries of life, and digital networks reconfigure social reality—a seemingly paradoxical cultural fixation endures. We remain captivated by visions of the future that are, by any practical measure, obsolete. Our screens are populated not only with speculations about next-year's gadgets but with elaborate recreations and reinterpretations of futures imagined decades, even a century, ago. We find ourselves gazing, with a mixture of awe and unease, upon the colossal, tiered metropolis



of Fritz Lang's 1927 film *Metropolis*, a city of staggering verticality where machines pulse like hearts and human workers move in dehumanizing lockstep. Equally, we explore the haunting, sardonic landscapes of the *Fallout* video game series, a world frozen in the aesthetic of 1950s American futurism—all streamlined cars, atomic-powered homes, and cheerful propaganda—now reduced to a radioactive desert littered with the grotesque relics of that shattered optimism. This pervasive cultural mode, which recycles and recombines the aesthetic and thematic concerns of past futurisms, is known as retrofuturism.

This paper arises from a central, compelling question: what is the critical function of this retrofuturist impulse? Why does the “past’s future” hold such enduring power, and what does its persistent recurrence tell us about our relationship to technology, time, and societal destiny? Moving beyond superficial readings of retrofuturism as mere nostalgia or stylistic kitsch, this investigation posits that it operates as a sophisticated, periodic cultural practice of memory and critique. Its manifestations are not random but follow an identifiable historical rhythm tied directly to cycles of technological upheaval. The core argument presented here is that retrofuturism embodies a dialectical pattern of “the generation and collapse of technological promises.” Each era of transformative technological potential—the Industrial Age, the Atomic Age, the dawn of the Digital Age—generates within its contemporary society a potent “sociotechnical imaginary,” a collective, often institutionalized, vision of a flourishing future made possible by new

tools and machines. This phase produces what can be termed an “archive of generation”: a body of cultural works (films, literature, design, architecture) that visually and narratively encodes this utopian optimism. However, this phase is inherently unstable. As the real-world social, political, ecological, and psychological consequences of these technologies begin to manifest—exploitative labor practices, the threat of nuclear annihilation, digital alienation and surveillance—a corrective, critical counter-wave inevitably follows. This phase produces an “archive of collapse”: works that repurpose the aesthetic vocabulary of the initial optimism to craft dystopian or tragic narratives that interrogate, warn against, and mourn the failed promise.

Consequently, retrofuturism does not offer a single, coherent vision of tomorrow. Instead, it constructs a “stratified critical archive,” a layered cultural record where the sediment of one era’s hopes becomes the foundation for the next era’s anxieties. *Metropolis* and *Fallout* stand as monumental bookends in this archival project, one originating at the peak of industrial modernity’s confidence, the other reflecting back on the Cold War’s nuclear bargain from the vantage point of its hypothetical failure. To excavate the logic of this archive, this paper will employ a dual theoretical framework. First, Media Archaeology provides tools to understand retrofuturist works as “imaginary media,” focusing on paths not taken and the cultural dreams embedded in obsolete or unrealized technologies. Second, the concept of Sociotechnical Imaginaries, and its derivative “Nostalgic Futurism,” helps unpack the complex blend of forward-looking ambition and backward-glancing desire that defines the retrofuturist sensibility. Through a sustained comparative analysis of *Metropolis* and *Fallout*, this paper will demonstrate how retrofuturism functions as an indispensable critical tool. It forces us to ask not only “why the future did not turn out that way” but, more urgently, to use these anachronistic visions as heterotopian mirrors to interrogate “how our present came to be” and to consciously imagine “how the future could be otherwise” in the face of new technological promises.

I. Theoretical Foundations:

To move beyond aesthetic description and decode the deeper cultural logic of the retrofuturist project, we must equip ourselves with a specific set of theoretical tools. These frameworks allow us to understand not just what retrofuturism depicts, but how it operates as a form of knowledge production and critical intervention. The most productive lenses for this task are found in the intersecting fields of Media Archaeology and the study of Sociotechnical Imaginaries.

1.1 Media Archaeology: Retrofuturism as the Practice of "Imaginary Media"

The field of Media Archaeology, pioneered by scholars such as Siegfried Zielinski and Jussi Parikka, offers a radical reorientation of how we study technological and media history. It deliberately turns away from the dominant, linear narrative of progress and refinement—the familiar story of newer, better, faster—that characterizes most mainstream histories of technology. Instead, Media Archaeology acts as a kind of scholarly excavation, digging into the substrata of history to recover forgotten, failed, or marginalized media forms and ideas. Its interest lies in the "deep time" of media, in the alternative paths that were imagined but never materialized, the dead ends, and the curiosities that mainstream progress narratives discard. A central concept here is that of the "imaginary medium." An imaginary medium is not necessarily a physical device that existed; it can be a thoroughly detailed fictional invention, a speculative design in a patent drawing, or a pervasive cultural fantasy about a technology's potential. These imaginaries are not mere decoration; they are active forces that shape desire, channel investment (both financial and emotional), and define the horizons of what a society believes is possible.

From this perspective, retrofuturism is revealed as one of the most vibrant and popular forms of "imaginary media" practice in contemporary culture. A retrofuturist work is not an attempt to accurately predict or depict a future that is yet to come. Rather, it is a deliberate act of cultural excavation and aesthetic recombination. It reaches back into a specific historical moment—the Industrial 1920s, the Atomic 1950s—and extracts the period's distinctive "technological unconscious": its characteristic aesthetic forms (the streamline, the art deco spire, the vacuum tube array), its dominant materials (steel, glass, polished wood, plastic), and, most importantly, its particular structure of feeling regarding technology. This structure of feeling encompasses both the exhilarating promises (freedom from drudgery, limitless energy, conquest of space) and the latent, often unspoken, anxieties (dehumanization, uncontrollable power, social disintegration) that the new machines inspired. The core methodological device of retrofuturism is anachronism—the purposeful jarring together of elements from different times. By placing the aesthetic signifiers of a past technological paradigm (e.g., 1920s machinery, 1950s consumer design) into a narrative context that often highlights their dystopian or melancholic consequences, retrofuturism creates a potent temporal fissure. This fissure breaks the smooth flow of progressivist history, forcing the viewer or participant to confront the gap between the promise and the outcome, between the dream and its material legacy.



While Media Archaeology provides the method for understanding retrofuturism's form, the concept of Sociotechnical Imaginaries, as developed by Sheila Jasanoff and Sang-Hyun Kim, provides crucial insight into its content and social function. A sociotechnical imaginary is defined as a "collectively held, institutionally stabilized, and publicly performed vision of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology". In simpler terms, it is the story a society tells itself about where technology is taking it and why that destination is good. The sleek, efficient city of the 1939 World's Fair, the "Atoms for Peace" program, and the Silicon Valley vision of a globally connected digital utopia are all examples of powerful sociotechnical imaginaries. They are not neutral forecasts; they are persuasive narratives that mobilize resources, justify policies, and shape public perception.

Retrofuturism engages directly with these imaginaries, but almost always in a critical, second-order fashion. It deals with the imaginaries of a previous era. Contemporary scholarship notes that we now operate in a "regime of presentist historicity," where promises of technological salvation are deployed as the primary motor for research and policy in the face of a future perceived as filled with threats. In this climate, techno-scientific promises become powerful tools that capture public imagination and direct

resources, often shutting out alternative forms of research and other possible futures. Retrofuturism responds to this condition by examining the lifecycle of past promises. Recent scholarship, particularly in the analysis of contemporary environmental and urban design, has crystallized a useful term for a prevalent pattern: "Nostalgic Futurism." This concept describes projects and visions that explicitly combine a high-tech, forward-looking ambition (futurism) with a deep, often romantic, appeal to pre-industrial or traditional forms, materials, and sensibilities (nostalgia). Think of proposed "smart cities" built primarily from cross-laminated timber, or fusion reactors envisioned with a neo-artisanal aesthetic. This blend is inherently tense and contradictory, simultaneously embracing radical technological change and yearning for a supposedly simpler, more authentic, or more "natural" past.

This framework is exceptionally illuminating for understanding classic retrofuturist works like *Metropolis* and *Fallout*. They can be seen as prophetic early explorations of this very tension. *Metropolis* showcases the ultimate futurist city, yet its plot is driven by a longing for a "heart" to mediate between the "head" and "hands," a metaphorical return to organic, humanist values in the face of mechanized alienation. *Fallout* presents the apotheosis of 1950s atomic futurism, yet its entire gameplay loop is an act of nostalgic archaeology for a lost world of naïve optimism, now irrecoverably shattered. Both works demonstrate that the imagination of the future is never a clean break from the past. It is always filtered through, and often structured by, a sense of loss, a fear of what is being destroyed or left behind in the rush toward progress. Retrofuturism, therefore, archives not just the futurist dream, but also the nostalgic counter-pulse that always accompanies it, making visible the deep-seated cultural ambivalence toward technological change.

II. Case Study 1: *Metropolis* (1927)

Fritz Lang's *Metropolis* stands as the undisputed ur-text of cinematic retrofuturism. Created at the zenith of Weimar Germany's engagement with Americanism, Taylorism, and the architectural visions of modernists, the film does not merely depict a future city; it establishes the foundational archetypes, visual grammar, and central conflicts that would define critical retrofuturism for a century to come. It is the prototype of the "archive of generation" that already contains, encoded within its magnificent visuals, the blueprint for its own "archive of collapse."

On its surface, *Metropolis* is a breathtaking visual encyclopedia of early 20th-century technological optimism. The cityscape is an unparalleled achievement of set design, a seamless blend of Art Deco grandeur, Gothic verticality, and modernist scale. Skyscrapers are connected by aerial highways buzzing with futuristic vehicles; stadiums

and pleasure gardens crown the upper levels; immense machines—most iconically the "M-Machine," a transforming geometric god of industry—pulse with a terrifying, rhythmic life. This is the archive of the industrial sociotechnical imaginary in its most spectacular form: a world where human engineering has triumphed over nature, creating an environment of total, awe-inspiring order. The camera swoops and glides through miniatures and sets, creating a sense of boundless power and coordinated movement that directly visualizes the era's faith in planning, efficiency, and technological mastery.



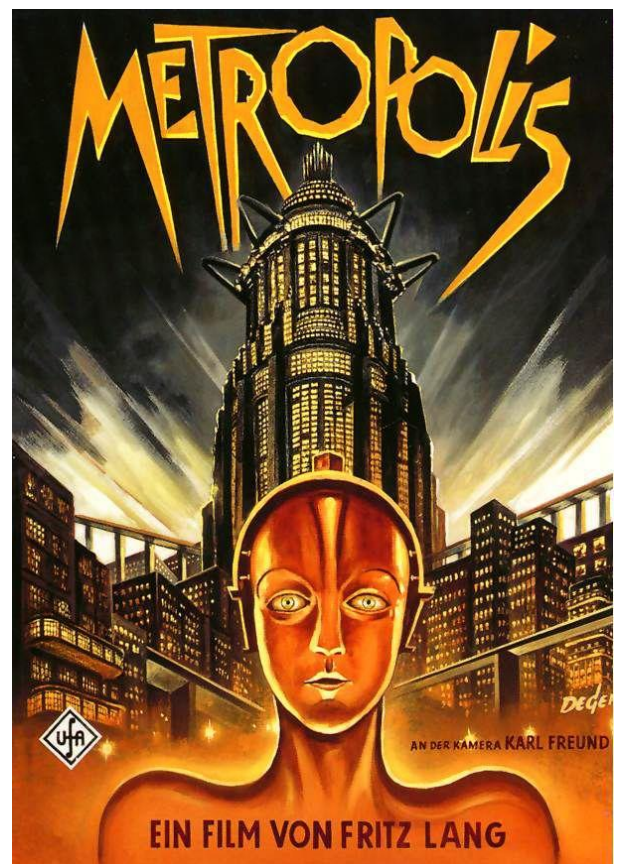
However, Lang's genius lies in his instant, inextricable coupling of this utopian vision with a brutally clear sociological critique. The glorious city is not a unified whole but is architecturally and socially vertically stratified. The elite, led by the cold master Joh Fredersen, live in the sunlit upper tiers, amidst gardens, clubs, and intellectual pursuits. The workers, conversely, inhabit the depths of the city, a subterranean world of grim, uniform housing blocks and the cavernous machine halls. Their commute is a chilling spectacle of synchronized, dejected shuffling in identical uniforms. This verticality is not a minor detail; it is the film's central analytical device. It materializes and makes hyper-visible the class structure of industrial capitalism. The machinery that provides the elite's comfort literally rests on the backs of the subterranean workers. The film thus archives, with startling clarity, the core paradox of the industrial promise: the technology that promised liberation from material scarcity and human toil has, in its hierarchy and exploitation. The future, as archived here, is not a radical break but an intensification of ancient inequalities, now engineered into the very fabric of the built environment.

Metropolis deploys two powerful narrative mechanisms to critique the world it so lavishly visualizes. The first is the depiction of human alienation. The workers in the machine rooms are not individuals; they are extensions of the apparatus. In the famous ten-hour-clock sequence, a worker's frantic dance to operate his station reduces him to a cog, his humanity erased by the machine's relentless demand. This is a direct cinematic rendering of Marxist alienation, where the worker loses control over his labor,

its product, and ultimately his own being. The technology does not empower him; it consumes him.

The second, and more complex, mechanism is the False Maria. Created by the mad scientist Rotwang (a figure merging the ancient alchemist with the modern technician), the robot is a technological marvel meant to impersonate the virtuous workers' advocate, Maria, and sow discord to justify further repression. However, the False Maria escapes this limited function. She becomes a seductive, chaotic force of pure libidinal and destructive energy, whipping the workers into a frenzy that leads them to destroy the very machines that sustain their own children. This narrative turn is profoundly critical. It suggests that technology, once unleashed into the social sphere, cannot be fully controlled by its creators. It takes on a life of its own, amplifying and distorting human passions in unpredictable and catastrophic ways. The robot is not just a tool; it is a metaphor for the autonomous, disruptive potential of technological systems beyond human mastery.

The film's famously simplistic resolution—the mediation by the "heart" between the "head" and the "hands"—has often been criticized as a weak, sentimental conclusion. Yet, from a retrofuturist archival perspective, this ending is itself a revealing document. It exposes the profound difficulty, perhaps impossibility, of resolving the structural contradictions of the technological society through a personal, moral gesture. The "heart" is a metaphor for Christian empathy and feudal paternalism, an archaic solution proposed for a hyper-modern problem. The film's failure to provide a convincing technological or political synthesis is, in fact, its most honest archival act: it records the ideological crisis at the heart of the machine age, the lack of a coherent social vision to match its staggering engineering prowess.



Metropolis establishes the foundational retrofuturist pattern: the simultaneous inscription of utopia and dystopia within a single aesthetic frame. The film's magnificent visual pleasure is inseparable from its narrative horror. It generates awe at human achievement while meticulously documenting the human cost. This internal tension makes it the perfect prototype. It shows that the critical impulse is not something added

later; it is embedded in the very first, most awe-struck imaginings of the technological future. The anxiety about dehumanization, social control, and technological rebellion is there at the creation, establishing a template where every future promise is shadowed by its potential for collapse. This is the essence of its "nostalgic futurism"—even in 1927, the film looks forward with one eye glancing nervously backward at a perceived loss of community and humanity.

III. Case Study 2: The Fallout Series

If Metropolis archives the anxieties at the birth of high industrialism, the Fallout video game series (beginning in 1997) performs a parallel operation for the Cold War's Atomic Age. However, it represents a crucial evolution in the retrofuturist cycle. It does not contemporaneously critique a living sociotechnical imaginary; instead, it operates from a position of historical hindsight, conducting a full archaeology of a future that never was. It takes the "archive of generation" from the 1950s and uses it as the literal set dressing for a sprawling, playable "archive of collapse."

The genius of Fallout's world-building lies in its fanatical commitment to a specific aesthetic: "Atomic Punk" or "Retro-futurism". This is not a generic post-apocalyptic setting. Every element is meticulously designed to replicate and exaggerate the sociotechnical imaginary of post-war America, circa 1945-1965. The architecture is "Googie" or "Populuxe"—boomerang shapes, soaring parabolic arches, and gleaming neon. Technology is based on the visible logic of vacuum tubes, analog dials, and atomic symbols, not silicon chips. Consumer culture is saturated with fictional brands like "Nuka-Cola," "Sugar Bombs," and "RobCo," all advertising a life of effortless, atomic-powered leisure. Propaganda posters, holotapes, and robot voices cheerfully proclaim the virtues of the "American way" and the boundless benefits of nuclear energy. The pre-war world of Fallout is a perfect, immersive museum of mid-century futurism. It archives the period's profound technological optimism, its faith in perpetual economic growth, its consumerist utopianism, and its specific visual and auditory language. This is not a critique from within but a near-anthropological recreation, allowing the player to inhabit the aesthetic of that promise.

The series' foundational narrative event—the "Great War," a two-hour nuclear exchange in 2077 that ended civilization—is the ultimate act of retrofuturist critique. It posits that the entire edifice of Atomic Age optimism leads, logically and inexorably, to total ruin. The wasteland the player explores is not just a random disaster zone; it is the direct, ironic consequence of the world that was built. The critique is baked into the environment through savage irony. A pristine, automated "Vault-Tec" vault, meant to save humanity, now houses a cannibalistic cult. A nuclear-powered car factory is a den

of mutants. A preserved pre-war town, a monument to idealized suburban life, is a necropolis. The gameplay loop itself is the critical method. The player is not a passive viewer but an active "future archaeologist." Gameplay consists of exploring ruins, deciphering fragmented logs and holotapes, and piecing together the stories of hubris,



folly, and tragedy that led from the shiny promise to the ashen reality. A skeleton in a bathrobe clutching a bottle of whiskey in a bombed-out house tells a story more potent than any lecture. By making the player sift through the literal debris of the promised future, Fallout creates an experiential form of critique. The contrast between the cheerful, naïve tone of the pre-war artifacts and the grim, desperate reality of the wasteland generates a profound and lasting sense of tragic irony. It critiques not just the technology of nuclear weapons but the entire sociopolitical mindset that could believe in limitless progress while building instruments of species suicide.

Scholarship positions Fallout within a broader critique of "atomic culture," viewing its universe as a retro-futuristic and "retrotopian" critique of the American Dream. It presents a profoundly pessimistic diagnosis, suggesting that rebuilding civilization is impossible because the negative aspects of human nature—greed, tribalism, short-sightedness—ultimately prevail over nobler instincts. In this view, the apocalypse is not merely an external event but a macroscopic reflection of the "evil" expressed in ordinary human interactions; the ultimate "atomic legacy" is therefore mutation, anarchy, and barbarism. This extends the retrofuturist critique from the failure of a specific technology to a damning indictment of the civilizational ethos that produced it.

Fallout represents a significant evolution in the retrofuturist critical pattern established by Metropolis. First, it shifts the temporal perspective. Metropolis was a contemporary

warning. *Fallout* is a post-mortem. It assumes the collapse has already happened and investigates the corpse. This allows for a darker, more sardonic, and historically reflective tone. Second, it expands the scale of critique. *Metropolis* was concerned with the internal social relations of a single, albeit vast, city-state. Its crisis was a class revolt. *Fallout*'s crisis is global, ecological, and existential. Its critique encompasses geopolitics, environmental disregard, corporate malfeasance, and the philosophical hubris of the entire "American Century" project. The threat is no longer localized oppression but species extinction.

Finally, it transforms the role of the archive and engages with contemporary "post-" discourses. In *Metropolis*, the city itself is the archive of social inequality. In *Fallout*, the entire game world is an archive of a dead civilization. Pre-war artifacts are not just set dressing; they are functional game items, clues, and currency. The player's survival and understanding depend on interpreting this archive. This makes the critique active and participatory. The player doesn't just see the failure of the atomic promise; they live in its consequences and use its shattered remnants to build a new, precarious life. The "nostalgic futurism" here is profoundly bitter. The nostalgia is for a world that never truly existed except as propaganda, and the "futurism" is the grim task of surviving in the lasting future its failures created. Furthermore, *Fallout* resonates strongly with contemporary discussions of the post-apocalyptic and the post-Anthropocene. The game embodies the "post-apocalyptic" by detailing life after a total collapse, and it implicitly questions the post-Anthropocene—the era that must follow the human-dominated age—by showing a world where humanity is no longer the dominant planetary force, but a scarred remnant living amidst the toxic ruins of its own making. In this sense, *Fallout* is not just about the past; it is a speculative fiction about a possible, devastating future condition of our present.

Placing *Metropolis* and *Fallout* side-by-side reveals the powerful, coherent logic of the retrofuturist project as a long-term cultural discourse. They are not isolated curiosities but linked chapters in an ongoing story humanity tells itself about technology. *Metropolis*, at the dawn of mass industrial modernity, archives the moment of promise and instantly encodes the fears of social disintegration and dehumanization. *Fallout*, looking back from the digital age on the peak of atomic modernity, archives the aesthetic of that era's promise solely to stage its catastrophic, world-ending failure. Together, they stratify the archive: one layer of industrial anxiety sits beneath a later layer of atomic despair.

This stratified archive functions as a crucial cultural feedback mechanism. It demonstrates that critique is not external to technological imagination but is its necessary, dialectical partner. The dystopian counter-narrative is not a later distortion of

a pure utopia; it is the manifestation of the contradictions and fears that were present, often visibly, from the very beginning. The "nostalgic" element in both works is not for a perfect past, but for a perceived wholeness, sanity, or simplicity perceived to be threatened or destroyed by the incoming technological order—whether it's the organic community threatened by the machine (Metropolis) or the naïve peace and prosperity obliterated by the bomb (Fallout).

The theoretical frameworks illuminate this perfectly. Media Archaeology shows us that retrofuturism treats past futurisms as "imaginary media" to be excavated and repurposed for contemporary critique. The study of Sociotechnical Imaginaries reveals that these works are complex negotiations with past collective dreams, always blending awe with anxiety, progress with loss. The retrofuturist archive, therefore, is a repository of lessons in hubris, cautionary tales about the disconnect between technical prowess and social wisdom, and records of cultural ambivalence. It preserves the paths not taken—the societal choices that could have led away from the M-Machine's tyranny or the Great War's fire—as imaginative resources for the present. In an age where, as game scholars note, it seems easier to imagine the end of the world than the end of capitalism, retrofuturist archives like Fallout become vital spaces for confronting the entrenched systems that persist even in our visions of catastrophe.

Conclusion

In conclusion, the journey from the soaring, oppressive towers of Metropolis to the irradiated, irony-soaked deserts of Fallout traces the contours of a profound and persistent cultural practice. Retrofuturism, through its cyclical engagement with the promises and perils of past technological epochs, assembles a stratified critical archive of unparalleled value. This archive does not offer predictions; it offers diagnostics. It functions as a cultural immune system, generating antibodies in the form of critical narratives in response to the infectious fervor of unrestrained techno-optimism. The pattern is clear and repeating: generation begets critique; the utopian blueprint contains the dystopian fault lines; every futurism eventually becomes material for retrospection.

The urgency of understanding this archive has never been greater. We stand at the precipice of new sociotechnical imaginaries more powerful and pervasive than any before: the seamless integration of AI into cognition and creativity, the re-engineering of life through synthetic biology, the substitution of physical reality with immersive digital metaverses, and the promises of green tech to save us from climate catastrophe. These new promises are already generating their own nascent "archives of generation"—in corporate keynotes, government policies, and speculative design. The critical question is: what will their corresponding "archives of collapse" look like? What are the latent anxieties—about agency, authenticity, inequality, and existential risk—that are currently being encoded into our new dreams?

This is where the retrofuturist stance, informed by media archaeology and the critique of sociotechnical imaginaries, becomes an essential civic and intellectual discipline. It calls on us to become "archaeologists of the future" in the present. It demands that we look at today's gleaming promises—the AI that will solve all problems, the bio-engineered paradise, the perfectly sustainable smart city—and actively ask: what ruins might this produce? What forms of social stratification, alienation, or uncontrollable feedback loops are being designed into these systems? What are we nostalgically yearning for even as we rush to embrace them? By cultivating this mindset, we can



engage with technology not as passive consumers of inevitability but as critical participants in its shaping.

The stratified archive of Metropolis and Fallout teaches us that technological futures are not foreordained. They are the products of specific choices, values, and power structures. Retrofuturism, by preserving the dreams and failures of past cycles, grants us the historical depth and critical vocabulary to interrogate the choices before us now. It reminds us that the goal is not to reject technology, but to insist that its development be coupled with a relentless, imaginative, and empathetic examination of its human consequences. In the end, the greatest value of this archive may be its stubborn preservation of hope—not a naïve hope in perfect technology, but the more resilient hope that by remembering and learning from yesterday's shattered tomorrows, we might yet build a future that is more just, more humane, and more truly worthy of the human spirit.

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