

Exposed Nerves and Archival Impulses:
Digital Ruination and the Death of Adobe Flash

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“Media cross one another in time, which is no longer history.”

Friedrich Kittler, *Gramophone, Film, Typewriter*

“Is the Internet dead? This is not a metaphorical question. It does not suggest that the Internet is dysfunctional, useless or out of fashion. It asks what happened after it stopped being a possibility. The question is very literally whether it is dead, how it died, and whether anyone killed it.”

Hito Steyerl, *Too Much World: Is the Internet Dead?*

“Because the sunset, like survival, exists only on the verge of its own disappearing.”

Ocean Vuong, *On Earth We're Briefly Gorgeous*

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Introduction

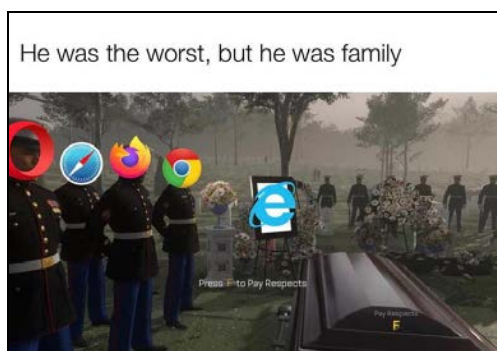


Those of us who grew up online can easily recall the refrain: “once you put something on the Internet, you can’t take it back.” But reality suggests otherwise: this fear tactic failed to account for the digital ruins which we encounter daily. They are so normal, in fact, that we have become immune to the threat of loss. Irritated by the pop-up warning of a broken webpage or disheartened by the words “This Tweet has been deleted,” we have outlived the fanciful delusion of digital permanence. We collectively witnessed the quiet disappearance of GeoCities, Vine, Microsoft Explorer, and most recently, Adobe Flash; platforms which we commemorate through YouTube video compilations or memes of mourning. But in overcoming this fear of an Internet that does not forget, a new kind of relationship to the Internet has emerged: when we log online, we willfully situate ourselves inside of a ruinous landscape. The horror of nothing to be seen—broken webpages or deleted content—has become a coming of age ritual. We expect computers to *just* work, but the nature of our interactions with the machine show that we

¹ This Is Me If Grieving Something I can Never Return To Was a Job.

instinctively approach it aware of its imperfections. Twisted by a culture of obsolescence and seized by the fragmentation of the Internet, networked activity is a confrontation with ruin.

To speak of digital ruins, we conjure ghosts from every corner of the Internet: the California dreamer and his startup, the GeoCities tween and her glittery home page, the Club Penguin gamers with a ban streak for cursing, even anti-anarchist advocates for web accessibility. The incantation I have written in the following pages is a spell that cannot be broken, for it is traced from the etchings of labyrinth walls, a labyrinth of “no longer” and “not yet” that already guides your mouse, finger, camera, and joystick. We will thus summon ambivalent ghosts who like to play tricks with materiality and causality, because learning their tricks means we can leave the dread behind as we approach the question of digital ruins. I wonder, then, what is the process of digital ruination—what are its artistic, political, and financial concerns? And how can we use this framework to comprehend changes in the form, content, and romance of the Internet?



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² Press F to Pay Respects.

³ RIP Vine Meme Depicting a Town before and after Its Ruin.

⁴ Rip Adobe.

I approach these questions with the digital avatar as a central figure. The avatar can take the form of any playable entity which interfaces both the machine and user: a videogame character such as Mario, a personalized Facebook profile, or even the blinking cursor as you type on the virtual page. Foregrounding the avatar means that we can assess processes of digital ruination as more than mere observations of decay or the woes of the terminally online, and instead consider the intersecting histories of the Internet and their bearings on our networked subjectivity. Since avatars realize and situate the networked subject by means of play, performance, and consumption, avatarship has always been a contested site of self-creation, experimentation, and branding. The player makes the world. The virtual does not replace the real, but augments it, for virtual bodies are actual bodies augmented by digital play.⁵ The spatial arrangement—be it video-sharing platform or open-world RPG—that embeds the user decenters the human body. By inviting nonhuman actors into the conception of the self, digital play situates human subjectivity in a liminal space that allows for intercorporeal transmission between mind, body, and machine. This configuration enables a material feedback loop of skin, muscle, hardware, and software; or, as described by gaming culture critic Brendan Keogh: “a cybernetic assemblage of human and nonhuman bodies across virtual and actual worlds.”⁶ Gameplay, and I use this term to describe the general usage of digital and/or networked technology, takes the form of an ouroboros: there is no stable point of agency, and the self emerges from a dynamic and interdependent ecology of mind and matter.⁷ This scaffolding of cybernetic circuitry disposes the avatar to processes of fragmentation and dispersion that must fuse with desire to make it whole

⁵ Keogh, *A Play*, 6.

⁶ *Ibid.*, 40.

⁷ Davis, *Techgnosis: Myth*, 129.

again. This cohesive desire evokes agency. As a result, the agency of the player is shared with the avatar itself through the computer interface. While presence may be distributed, the avatar is still situated, and it is an assessment of the possible set of actions from which we can make any claims about agency. Since “we pay attention and feel through the materiality of the avatar,”⁸ its disposition is immanent in the intimate relationships between human and machine.

Avatars are designed to encourage discovery through experimentation, to represent a host of images: mystical, abject, redemptive, demonic, alive. Being the crux of the feedback loop, avatars are as ubiquitous as the internet itself. This ubiquity simultaneously poses a threat and an opportunity. Driven by a desire to engage in experiments of interaction through anonymity, pseudonymity, pure irony or unabashed sincerity, users build homes in the participant-driven protocols of the internet. Without the transferral of agency from user to avatar, they are little more than pixel dust. As I have previously argued, user agency is being continually refashioned through the avatar and its variety of potential uses and forms, resulting in subjectivities which complicate any straightforward reading of the Internet’s past, present, or future.⁹

By describing networked activity as gameplay, with the avatar as our means for embodiment in networked spaces, we should also consider how the Internet is actually a playable interface. The history of the avatar is the history of digitally augmented play. While it is easy to relegate the avatar to the confines of a dress-up game or Runescape server, we cannot limit ourselves to such a strict conception of play, or we risk overlooking the change we seek to identify. With increasing technological complexity and commercialization, the Internet has been undergoing a process of gamification, which denotes the technical and aesthetic counterpart to

⁸ Keogh, *A Play*, 6.

⁹ Haid, "Introduction," *Re/Skinned Agency: The Avatar's Disposition*.

neoliberalism.¹⁰ Gamification, or the propagation of video game design and logic in non-game activities, rather than just making everything more vivid and exciting (which it usually does), makes sure that games are as ubiquitous as the Internet itself. As actors well-rehearsed for the leaderboard screen, avatars carry the genetics of video games. Media theorist Patrick Jagoda posits that the game “translates neoliberal values” like the “normative order” of rational choice and a competitive edge “into a designed activity”.¹¹ From love (Tinder) to warfare (drone strikes) to healthcare (policy algorithms), game design has come to dominate our every strategy. Games are thus an “exemplary cultural form” and multiplier of success (as measured by financial gain and unchecked domination). Jagoda notes that “games both index and drive the development of neoliberalism, giving this abstract paradigm a concrete, material, and accessible cultural form.”¹² As networked activity takes on the form of games, and avatarship is subject to the rules and design of such games, avatars are dispositionally inclined to perpetuate neoliberalism at the level of the individual subject. More than just a multiplier for game logic, though, avatars are also social stories which can be used to illuminate contradictions between the actual design of networked spaces and their purported goals.

Whether it is a play on identity afforded by anonymity or playful expression pushing the keyboard’s creative limits, cyberspace is an uneven terrain, and before the mobile revolution—a time when the Internet was accessed primarily through the web— its many man-made mountains included low bandwidth, browser incompatibility, and a lack of standardization. Enter the Flash platform. Overcoming these barriers—but not without erecting a mountain fortress of its own—

¹⁰ Jagoda, *Experimental Games*.

¹¹ *Ibid.*, 43.

¹² *Ibid.*, 61.

Flash made the web playable by integrating multimedia and interactivity into the web. This means in-browser video, audio, games, and a sense of liveness. It was a tectonic shift which impacted the character of financial transactions, media publishing, and social life in digital networked culture.

To clarify, when I say Flash, I am referring to an ecosystem of software, as imagined by Anastasia Salter and John Murray: “the many incarnations of the Flash development environment, the different versions of the Flash Player, the related specifications and the bytecode produced by the Flash compiler and interpreted by the various players.”¹³ Offering greater affordances when compared to the skeletal web of pure HTML, Flash indexed many developments in how the web looks, feels, works, and plays. Though it began as standalone animation software, it eventually evolved into the de-facto standard for online multimedia—it made the Internet fun. It configured the web as something beyond a rigid *interface* or streamlined *experience* because, as an engine of play, the Flash platform befriended the avatar. After presenting a general theory of digital ruination, I explore the recently deprecated Flash platform for deeper insight into the phenomenon.

¹³ Salter and Murray, *Flash: Building*, 11.

			<i>Column edited by author</i>
HCI	UX	War	Platform
Computer	Technology	Gun	Game
Interface	Experience	Gun Sight	Play
Users	People	Soldiers	Avatars

Recreated table from Olia Lilliana's *Rich User Experience, UX, and Desktopization of War*.¹⁴ The fourth column is my contribution to this framework for interpreting digital design. The platform framework views the machine as a game, which renders us as avatars who engage with the machine through play. Meanwhile, HCI views the machine as a computer which makes us users who interface the machine. UX views the machine as technology to be experienced by people. The war framework views the machine as a weapon which renders us soldiers who view the machine as if we are looking through a gunsight.

Digital ruins are not usually caused by a single actor or interest. They index overlapping vectors of user agency, be it views or clicks, subscriptions or microtransactions, anonymous trolling or LinkedIn job hunting. Oftentimes the un/accessibility, un/accountability, or un/popularity of these pathways for directing capital will guide infrastructural developments of the Internet. Sometimes called innovation, other times called a culture of obsolescence, the evolving protocols of the Internet do not forgive lag. Who defines innovation defines ruination. Such interventions in where the network can reach and how it gets here return us to the figure of the avatar: the distribution of agency across player and machine may be sacred, but it is not untouchable. When the feedback loop is out of joint – given the willing or forced migration of the avatar to a different playground – ruination sets in. We must acknowledge, too, that digital ruination is a drawn-out process. Technological innovations do not happen overnight, and the feedback loop between avatar and game is not so easy to untangle. In this sense, we cannot simply call ourselves victims of obsolescence, for avatarship affords us the ability to intervene in

¹⁴ Lialina, "Rich User," Contemporary Home Computer.

the process of digital ruination. We do not *use* networked technology, we *participate* in, through, and with it. By investigating how users collectively negotiate digital ruination, we can better understand its process and our possibilities for intervention. I hope to convey that double hermeneutic¹⁵ at play here, in which the rituals of remembrance or crowdfunded preservation projects that emerge in response simultaneously resist and reify neoliberal governmentality. We gaze upon ruins and are struck by wonder and shame.¹⁶

This project begins with the story of Infomart, a Crystal Palace replica turned server farm located in my hometown of Dallas, Texas. As we follow developments in Dallas's transportation infrastructure, Silicon Valley aspirations and boom-and-bust cycles, we trace the outline of a model for digital ruination. I emphasize here that Infomart represents but one model for digital ruination, one which finds itself undergoing processes of degeneration and regeneration despite points of disruption in its status, function, and profitability. Including this example also conveys the sense that digital ruins are not exclusive to a networked context, but persist at every point along the continuum of real to virtual. Infomart situates many of the affective and existential experiences of those betrayed by promises of the Information Age and its brothers in finance. I argue that digital ruins are tethered to the absence of the avatar; therefore, as a site of digital ruination, I contend that Infomart's absence of bodies is most significant. By illustrating the history of Infomart through a combination of prose and archival media, I hope to lay the groundwork for theorizing how ruination in the information age works, looks, and feels.

¹⁵ Building on Frederic Jameson's concept of the "double hermeneutic" which allows us to interpret something as both a reification of and challenge to a dominant power.

¹⁶ "Wonder and shame" are central concepts to this work, which I attribute to Peter L'Official's *Urban Legends: The South Bronx in Representation and Ruin*.

Before our final assessment of Flash's ruins, I present a survey of digital ruins: "Sites/sights of ruination", "Cycles of Dust and Debris", and "The Deprecated Platform". I do not aim to be exhaustive here. I propose these three models of digital ruination in order to flesh out their inner workings, contradictions, and commonalities. In the subsection "Sites/Sights of Ruination," I situate digital ruination within a wider critique of digital prosumerism. For the unpopular MMO or chat forum and their crafted interfaces, traces of agency are detectable through the intentionality of the space. Built as public spaces, they are haunted by the dreams of their makers. Because they are "always on"—not yet banished to the realm of obsolescence—ruination is signified by the absence of avatars. This absent presence which is both seen and felt throughout the networked space, actually ties together these varying models of digital ruin. I argue that the episodic or ongoing disruption of the feedback loop between player and machine is a key factor in sustaining digital ruin. The subsection "Cycles of Dust and Debris" explores the subversive potential of avatars under algorithmic domination by modeling the de/regenerative capacity of digital ruins. While it is easy to say that the avatar's agency is simply arrested by the personalized content feed and under siege by the rapid production of culture, I argue against this angsty reading to say our internalization of digital ruination actually produces a unique appetite. With the ruined landscape as a playground of possibility, this appetite cultivates remixed, appropriated, ironic tastes in terms such as humor, fashion, or politics. Here, the absence of the avatar signifies the potential for reclamation, as opposed to a nihilistic rendering of utter loss. As for "The Deprecated Platform," which I address in my final chapter, unlike the other models, its archival concerns enter the foreground. The issue of preservation takes focus, and thus we return to a more fundamental complication of capitalism: creative

destruction. The dis/continuity between the “Deprecated Platform” and other models of digital ruination pose interesting questions, and from here I begin an extensive investigation into the ruins and ruination of Adobe Flash.

The final section of this project follows a case study of the Flash platform, detailing its history by overlapping the various histories produced by and productive of the Internet. First and foremost, as a browser extension, the history of Flash is the history of web navigation, design, usability, and accessibility. Flash content was seamlessly woven into the user experience—until a single loose thread, like a laggy load time or interference of malware, would unravel the entire thing. Flash’s rise to ubiquity leads us to the professionalization of web design and indie game development, complicating the production and distribution of content given the added dimensions of competition and profitability. Alongside this we find increasing demands for web accessibility and standardization: web practices do not amorally serve capital, and Flash is no saint. Security flaws were one criticism, while the “irrational exuberance” associated with the Flash aesthetic would group it with the flawed judgment and “overvalued hype” which caused the dot com bubble to burst.¹⁷ As a prominent topic in the discourse surrounding what a “good” and “open” web should be, both the practical and moral dimensions of the Internet’s infrastructure were debated through the glittery and gratuitous prism that was the Flash platform. Problematically, Flash’s legitimacy as a rich media application rested on the basis of browser incompatibility and minimal regulation of web standards; however, the forces which sought to replace it—namely HTML and mobile technology—would champion these causes only to produce an Internet fragmented all the same, if only with a new look and feel. Flash calls

¹⁷ Sapnar-Ankerson, "Read/Write the Digital," 45.

attention to some of the most contentious debates surrounding commercialism, open software, and creativity on the web. Thus, I aim to unpack the implications of Flash’s ubiquitous presence in tandem with its potential for fragmentation: how is digital ruination counter/productive for realizing an open Internet? I address this question by assessing the claims made by leading web designers, advocates for open standards, and artistic interventions which interrogate such claims through playful use of the Flash medium.

The history of Flash is also framed by the history of the touchscreen mobile technology, platform capitalism, and the attention economy. After Steve Jobs famously declared Flash unfit for the mobile age by banning it from the iPhone, bells began ringing across news media outlets to commemorate the “Death of Flash.” While many of his criticisms rang true, his choice did not end the perpetual power struggle between corporate and democratic interests in the digital realm. The war between Apple and Adobe that ensued was not waged simply for the public good; rather, we were able to watch Internet traffic—and the avatars which surmise such traffic—migrate to mobile phones for internet access and forsake the web for a more “intuitive” and “optimized” experience. For Flash developers interested in game or web design, the revenue streams were also much more reliable in the “app” market ecosystem: this was due to the deadly combination of decaying worth of web page ads and a shrinking player base. With more promising pastures of profitability than HTML could ever guarantee, the platform became the dominant interface linking the avatar and the network. The concerns of regulability also shifted. The concerns surrounding regulability¹⁸ that came with Flash – accidentally downloading

¹⁸ A term I borrow from Jonathan Zittrain’s *The Future of the Internet and How to Stop It* to describe the condition of being regulable, not the precise methods of regulation.

malware or losing original content to Flash pirates – did not translate one-to-one on platforms. Instead, the software company itself sat on its own throne of regulation: Apple controls what software is allowed on our phones, Facebook shamelessly records and sells our private data, YouTube and Instagram creators alike are at the mercy of their platform’s free speech policy. Reflecting on these walled gardens, we can observe that digital ruination is a process beholden to the pressures of profit, sure, but here I would like to return to the role of the avatar. As Jonathan Zittrain laments, this continued march towards platformification leads us away from a generative net and towards profit-centric creation.¹⁹ As the avatar is increasingly surveilled, commodified, and cornered into closed ecosystems, and thus guided by algorithmic governance, how can we refuse the allure of nihilism and instead view digital ruination as a degenerative and regenerative force? By analyzing Apple and Adobe advertisements, interviews with Flash creators, and scholarly critiques of the platform economy, I explore the generative capacities of digital ruination and the subversive potential of the avatar.

Obscured by the mainstream discourse of technology (is it good? evil? too slow?), though arguably the most visible history which intersects with Flash’s is that of visual culture. As an alternative to gate-kept industries with high barriers for entry and a limited interest in experimentation, Flash disrupted the animation industry, guided the indie game scene from infancy to adulthood, and oversaw developments in networked art forms. Flash’s reputation revolved around this facilitation of multimedia experimentation and empowerment through independent publishing. The basic logic of Flash content creation rested on the postmodern traditions of pastiche and appropriation, and many Flash creators engaged in critiques of the

¹⁹ Zittrain, *The Future*.

political establishment, celebrity culture, novelty and virality. No topic was too taboo (9/11 was one of the most popular “themes” for Flash games in the early aughts). Furthermore, the rise of Flash-based artwork signaled a shift from the tendency in early net art to view the Internet as a portal to the future, and instead view the Internet as an engine and archive of its own obsolescence in a post-dot com world. It was often unpolished, amateurish, and shameless. Tracking this proliferation of Flash content across the web is vital to our investigation of digital ruins, and understanding the Flash ecosystem as a means for critical play provides us insight into its fossilized remains. Another significant feature of the Flash medium is that it collapsed the distinctions between literature and gameplay: the interactive and unstable nature of any text is augmented by the cybernetic encounter between avatar and web interface. To relate cybertexts, to borrow Espen Aarseth’s term, to the production of Flash content draws attention to the capacity for play: “the cybertext reader is a player, a gambler; the cybertext is a game-world or world-game.”²⁰ Just how a video game cannot be reduced to pure virtuality or mere mechanical interaction, any text is fundamentally material in that it requires embodied engagement: meaning itself emerges from the intermediative relationship between avatar and interface.

By threading together these narratives of the Internet, I aim for a composite history of Flash, one that highlights its contributions to the creative endeavors of its users and asserts the irrevocably personal and beautifully abject nature of the avatar. As of 2023, Flash is going on three years since its official end-of-life, which is to say that Adobe officially drew the curtains on over twenty years of entertainment. But this was after nearly every possible host—from the iPhone to Google Chrome to Unity—pulled support from the Flash Player. Adobe’s ruination

²⁰ Aarseth, *Cybertext: Perspectives*, 3.

was a protracted process, one that began long before Steve Jobs's magic bullet (the iPhone) and has ramifications which resonate far into the future. The changes of the Internet's topology all have bearings on this process by way of rearranging flows of labor, capital, and content in networked spaces. On our tour of Flash's ruins, we will look at a range of artifacts with varying materiality, temporality, and visibility. Performing something between an excavation and exhumation, we will dig out and examine Flash portals, Flash memes, SWF files and the Flash Player itself from beneath the Internet's crust. In doing so, together we meditate on Hito Steyerl's belief in the Internet's mortality and ubiquity: "The Internet is not dead. It is undead and it's everywhere."²¹

This project builds on Anastasia Salter and John Murray's *Flash: Building the Interactive Web*, the single scholarly and thorough telling of Flash history I came across in my research.²² It highlights the developments of the software platform as it exchanges hands between different companies alongside the enduring influence it had on amateur game development and aesthetics. They take issue with Flash's representation as "a technical footnote in the dominant history of media studies" and aim to complicate its status as an "accepted and often unquestioned part of the web's framework."²³ Working towards this same goal, I pick up where Salter and Murray left off in 2014 – before Adobe's end-of-life announcement and before the fallen bricks of Flash's fortress were being collected and dissected by Internet preservationists. Thankfully, we have Geert Lovink's periodization of the Internet (from 2008) to help frame our chronology: "First,

²¹ Steyerl, "Too Much."

²² That being said, dozens of accounts of "Flash History" exist on YouTube. Though they are not professional, they contribute to the broader conversation of Flash's history.

²³ Salter and Murray, *Flash: Building*, 13.

the scientific, precommercial, text-only period before the World Wide Web. Second, the euphoric, speculative period in which the Internet opened up for the general audience, culminating in the late 1990s dotcom mania. Third, the post-dot-com crash/post-9/11 period, which is now coming to a close.”²⁴ From my current perspective, I can take our contemporary “app-driven, hyper-conglomerate social media net”²⁵ into account within a larger history of Flash.

By recovering neglected media pasts and complicating the narrative of linear technological progress, I aim to address gaps in platform studies – or, rather, surpass its epistemic threshold – by incorporating an archeological perspective. Following up on key insights from Apperley and Parikka’s research, I emphasize that “the history of media technologies is traversed by multiple potential pathways, technological dead ends, lost histories, circuitous routes, and alternative conceptions.”²⁶ The archive produced through work in platform studies tends to leave out the “embodied memories and experiences of users”²⁷ when investigating the viability of a given platform. By centering the avatar in my assessment of digital ruination, I work towards remedying these faults in both methodology and the archive, and opening up analysis of the platform to include its articulations of play, labor, and space. Finally, Apperley and Parikka ask: how should platform studies narrate the “failed” platform? *Exposed Nerves and Archival Impulses* thus constructs a conceptual framework for approaching the question of digital ruination.

²⁴ Lovink, *Zero Comments*.

²⁵ Wagner, “404 Page.”

²⁶ Apperley and Parikka, “Platform Studies,” 354.

²⁷ Ibid., 352.



This essay is decorated with memes. Some are presented with sources, while others, such as this are presented without. Finding the exact date and location that a meme was born is a difficult task, one which I address in this body of work. In spite of the pirate economy that is meme-making, I have done the best job I can to provide credit whenever possible.

Part I: The Palace of Information



Photograph of Infomart from 2015,²⁸ with its interior as of 2013 documented in this [video](#).

Nearly 1.6 million square feet of real estate, nearly ten thousand strands of fiber coming into the building, yet nearly hollow where its soul lives.²⁹ Infomart houses a number of corporate persons, but hardly any real people—not for the last twenty years, at least. Inhabited today by critical cloud services, torrid server racks and their fiber optic kin, the "Palace of Information" finally bears the making of its name. As a replica of London's infamous Crystal Palace, its nineteenth-century glamour aspires to the imperial glory of the British Empire, but its sterile and vacant stare is anything but radiant. Vestiges of its former extravagance can be seen in the main hall: seven stories of unoccupied escalator steps still whirring as they overlook a flowing crystal fountain, unaware of its own antiquated mystique. Most unsettling is the absence of bodies—marveling faces, echoing footsteps, organic breath—which render Infomart a haunting distortion of its projected self. However, we must be careful not to overstate its former stature.

²⁸ Infomart Dallas.

²⁹ "Equinix to Acquire."

As demanded by the cyclical nature of technological innovation, with its happy-go-lucky speculation and merciless lay-offs, Infomart has always feigned loyalty to its royal subjects: it actually serves the free markets, to free the markets and make them free. What happened to the craftspeople and patrons? Who wears Infomart's crown, and who sits on its throne? Since its inception, the Palace of Information has struggled to keep these physical and financial vacancies filled. To understand how it assumed such a desolate state, I believe the best path forward is to ask: exactly what information is encoded within this Crystal Palace? The precarious labor arrangements for tech workers, the common sense way in which we default to personal responsibility for failure or success, and the hollowed out dream of a "global village" are the quick and dirty answers. In other words, the neoliberal order sits atop this throne of ruination, lonelier and richer than ever before.

The trajectory of Infomart's spatial dynamics—who used its space, how did they purpose it, and during what period of time—acts as a microcosmic model for developments in North Texas's high-tech industries and its mimetic desire to achieve the status of "Silicon Prairie." By illustrating the history of Infomart through a combination of prose and archival media, I hope to lay the groundwork for theorizing how ruination in the information age works. It can look like many different things: blogs we grew out of, MMOs we lost the password to, sites with rotted links and YouTube videos demolished by the copyright sledge hammer. In the case of Infomart, we lie our eyes upon an eternal present, a building which does not decay. Despite its lasting tangibility, it has undergone unmistakable changes, and it is precisely these disruptions in its status, function, and profit model that ripple through our digital imaginary. With a quick glance out the driver's window driving down Stemmons Freeway, its fate seems discernible and secure;

however, Infomart situates many of the affective and existential experiences of those betrayed by promises of the Information Age and its brothers in finance.



See that golden pocket up North? Real close to the Oklahoma border? You're gonna wanna take that. Swing off I-35 and exit to I-35E and you'll find yourself on Stemmons Freeway. Don't let the name fool you. The suffix 'E' might imply that this section of the highway was a sequel, an auxiliary piece, or an afterthought. I-35E was no facsimile: its path was in the original blueprint, covering nearly one hundred miles of the five hundred mile interstate highway that spans the state of Texas.

Proposed highway map of Texas in 1919.³⁰
Interstate 35 is highlighted in yellow.

As Penny Beaumont and David Ellis explain in *From Anywhere to Everywhere*, when construction finally began in the early sixties, I-35E was actually built on what used to be US-81, and its western counterpart, I-35W was incorporated into the plan as an alternative route to accommodate the Fort-Worth metroplex.³¹

Funded by President Eisenhower's Federal-Aid Highway Act of 1956, also known as the National Interstate and Defense Highways Act, I-35 was strategically mapped. A Cold War

³⁰ "Interstate-35 Corridor," map.

³¹ Beaumont and David, "From Anywhere."

historian might tell you these highways were funded, in part, as defense measures. Without reliable roads, there was no safety guaranteed for those evacuating a site of catastrophe—nuclear or otherwise.³² At the same time, the G.I. Bill was bringing home ownership to a large swathes of the population with low-interest loans and increasing the accessibility of college education. Suburbanization was rampant in postwar America, shaping and shaped by urban decay, White Flight, and the domestication of the oil industry. Since the construction of Interstate Highways in Texas, the stink of oil hangs heavy in the air, sucked in by the inhabitants of Mexican barrios, feudal ranches, cotton fields, and lofty plains. As Daniel Worden writes in his analysis of petroculture in American media, we have “positioned the postwar family as looking towards a brilliant future while also fearing inevitable destruction.”³³ Despite the environmental disruption, fossil fuels managed to smooth over many postwar anxieties by founding a new kind of affective belonging. In mid-twentieth century America, petroleum consumption was subsumed into a normative vision of the *good life*, fueling the nation’s engine of futurity. Portrayed as a tool of spatial and economic mobility, automobiles catalyzed a new relationship between oil, family, and nation: “oil persists as kinship.”³⁴ In this national imaginary, economic growth was premised upon the ubiquity of oil, the automobile, and in the case of North Texas, the highway.

Before and after the highways, Texas has been a region of uneven development. So what changed with the introduction of Interstate 35? Highways offered a new vision of social belonging constructed around the family automobile, a symbol not of oil’s parasitism but the seductions of independent mobility and renewed possibility. Worden describes this postwar

³² Ibid.

³³ Worden, "Fossil-Fuel Futurity," 451.

³⁴ Ibid.

sensibility as fossil-fuel futurity: “an ideological configuration in which normative life is produced through the commodities and modes of transportation made available by fossil-fuel culture...saturating aesthetic, affective, and family relations.” The new rituals of this new world, such as commuting from the periphery to the center for work, are “dependent upon the availability and social acceptability of fossil-fuel consumption.”³⁵ Undoubtedly a construction of spatial homogeneity, it is also one of mimetic impulse: what inspired postwar spatial arrangements and in Texas? To understand how oil and futurity became such intimate partners in sub/urban development, we need to learn a little more about business—*why* Dallas? We can catch a glimpse of the drama by looking to the history of the North Texas tech industry in the first half of the century.

The Second World War saw Dallas transition from small scale manufacturing to defense industry contracting, with their main contribution being military vehicle manufacturing, primarily directed by the Ford Motor Company.³⁶ However, the “academic” in the academic-military-industrial complex was missing from this equation. Much unlike California’s Silicon Valley or Massachusetts’s Route 128, Dallas’s high-tech efforts were far removed from the ivory tower of academia; instead of allying with research universities funded with federal monies, corporations were the nucleus of its endeavors in computing technology. Dallas was jealously watching these other burgeoning technology hubs make history. It decided it would do things its own way. Numerous plants were built across the Dallas-Fort Worth area from the 1940s onwards, and many businesses were shifting their focus to developing the area’s

³⁵ Ibid., 442.

³⁶ Lane, "Silicon Prairie," 17.

electronics and computing industry.³⁷ As North Texas's tech industry rapidly grows, so does its mimetic relationship to Silicon Valley. Rebranded as Texas Instruments in 1951 to mark its transition from a petroleum exploration company to one of electronics design and manufacturing, Geophysical Service Incorporated became a centripetal force in the spatial politics of Dallas's tech industry. It was an oasis in many regards. Most notable for its invention of the integrated circuit in 1958, this company not only filled the empty pool of engineering talent in North Texas, but also catalyzed the clustering of tech firms. Silicon Valley historian Annalee Saxenian observes this spatial strategy as one of the strengths shared by both Silicon Valley and Route 128. She also notes that geographic clustering alone does not ensure the emergence of regional networks of communication—another key configuration of corporations seeking competitive advantage in the electronics industry.³⁸ North Texas's tech industry grew in many directions, most noticeably North. Richardson, a Northern suburb of Dallas and home of TI, saw the aggregation of “companies, capital, and talent”, eventually cornering the telecommunications market in the wake of AT&T's monopoly splintering in 1984.³⁹ For the purposes of understanding Dallas, this clustering—the concentration of tech companies within a confined geographical space—awarded Dallas with the title of “nation's third-largest technology center” by 1970.⁴⁰

According to labor historian and anthropologist Carrie M. Lane, Dallas charmed financiers and entrepreneurs with its “pro-business environment...low taxes, inexpensive land, heap and

³⁷ Ibid., 18.

³⁸ Saxenian, *Regional Advantage*.

³⁹ Lane, "Silicon Prairie," 12.

⁴⁰ Lane, "Silicon Prairie," 18.

largely un-unionized labor force, affordable cost of living, and abundant natural resources.”⁴¹ In a state like Texas, these labor arrangements read as profitable not only because they favor uninhibited capital accumulation, but because they are longstanding fixtures of the Texas political economy.⁴² They are fixtures most compatible with the new expectations for work which emerged in the second half of the twentieth century: temporary, self-motivated, employing only “companies of one.”⁴³ In this society of the individual, the precarization of labor goes hand-in-hand with eradicating state provision of social services. Although the austerity measures are later developments which constitute neoliberal governmentality, here we can already see the proprietary individual crowning, with the unregulated free market as its midwife. With the introduction of the highway system in 1960, we begin to see an incorporation of the market mentality into how you move, re/produce, and protect yourself. As an accelerator of suburbanization, Interstate-35 helped shape the North Texas tech industry by expanding city limits and inspiring a culture of self-entrepreneurship. Petroculture relies on the cult of the individual; although this time period binds individuality to the nuclear family unit, it nonetheless chips away at the worth and possibility of public transportation, or a future without cars. Just like American historian Evan Bennet, I am compelled to ask: “highways to heaven or roads to ruin?”⁴⁴

⁴¹ Ibid.

⁴² This is not to say that labor is uncontested in Texas. We can trace this back to the Knights of Labor, the Great Southwest Strike in 1870 or United Auto Workers against Ford. Although emphasizing racial difference was a common tactic used by business owners trying to fragment the workforce, many of these demonstrations also show coalitions built between Mexican, Black, and White workers. However, as extensive the history of labor organizing goes, union-busting stretches just as far.

⁴³ Lane, "A Company."

⁴⁴ Bennett, "Highways to Heaven," 1.

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"Center of World Trade"⁴⁷

This vision of Dallas does not fear boom and bust cycles
 It does not fear speculation
 It's armed to the teeth with low taxes and cheap labor
 It's a god-fearing place. Not because
 It fears divine wrath or yearns for the second coming
 It fears the silicon gods
 The makers of the new dream
 The American technometropolis
 We are at the mercy of volatile labor markets
 Justice be damned
 The market has no need for a gavel
 Dallas follows its commandments:
 Be not idle, be not dependent, be the brand called you
 One market under god,
 Unaccountable,
 Now and at the hour of our billion dollar bailout

⁴⁵ AMERICANS BE LIKE GAS PRICES ARE HIGH LIKE CAR-DEPENDENT INFRASTRUCTURE.

⁴⁶ Itsmanibae, Screenshot of @itsmanibae's tweet about Dallas highway culture.

⁴⁷ This poem is inspired by these two promotional videos, each from around 1970, *Dallas Market - Center of World Trade* and *Dallas Market: Center of World Trade* as sourced from the Texas Archive of the Moving Image. The author highly recommends that the reader view one or both of these videos.

Founded in 1957 and opened in '59, Dallas Market Center was a defining feature of the city's campaign to promote commerce. Originally, it was a wholesale marketplace for retail buyers and manufacturers to purchase goods ranging from furnishings to fashion. For nearly twenty years, the campus consisted of the Dallas Trade Mart, Market Hall, Apparel Mart, and World Trade Center. These monuments to consumerism and our increasingly global networks of trade were projects of Dallas legend Trammell Crow, who as of 1984 was considered the largest real estate developer in the nation. The day of President Kennedy's assassination at Dealey Plaza, he and John Stemmons, whose father I-35E (Stemmons Highway) is named for, were expected to greet the President upon his arrival.⁴⁸ For better or for worse, these were the men who shaped Dallas's real estate market in the second half of the twentieth century. In many ways, their vision of Dallas is the Dallas we see today—in all its shiny and corporate glory.

⁴⁸ Beaumont and David, "From Anywhere."

The Crystal Palace



Screenshot from rare footage of the Crystal Palace in 1935 before it was burned down.⁴⁹ A recording of “The Great Fire At Crystal Palace” from 1936 is available here.⁵⁰ The author recommends that the reader views the footage presented here.

Itself less than 1% of the total landmass on our planet, the British Empire once covered roughly 25% of the world map. Despite being built on brutality and sabotage, the imperial prowess of Great Britain inspired pride in its citizens throughout the nineteenth century. Perhaps the rare jewels and precious diamonds encrusted in their national moral compass warped its ability to point in the right direction. The British were the “global watchmen” during Pax Britannica, a nearly hundred year stretch of unrivaled power which began around 1815.⁵¹ This was perhaps best encapsulated by one building: a building which, like British hegemonic power, no longer exists. This is not to say that the legacies of British imperial formations have not had significant bearings on anything less than a quarter of the world’s landmass, where nations had to

⁴⁹ "The Crystal Palace (1851-1936), rare footage 1935.," video, 01:21, YouTube, posted by Jozef, June 7, 2014, accessed May 1, 2023, https://www.youtube.com/watch?v=zZVGpCH0hHQ&ab_channel=JozefSterkens.

⁵⁰ "Great Fire At Crystal Palace Aka Great Fire Destroys Crystal Palace (1936)," video, 01:58, YouTube, posted by British Pathé, April 13, 2014, accessed May 1, 2023, <https://www.youtube.com/watch?v=MtUYYRouLAk>.

⁵¹ Johnston, *The Historical*.

claw their way out of a cauldron of violence. Rather, I point to the “elusive vectors of accountability”⁵² hidden within sites of imperial ruination, and the haggard trail of the British imperial psyche which is now being marched upon by American soldiers, politicians, and financiers.

The Crystal Palace was built as the home for the Great Exhibition of London in 1851, the first in a series of world fairs, and the first to epitomize the shameless and gaudy aesthetic values of Victorian Era Britain. As a glistening symbol of imperialist eccentricism (one poorly disguised as a moralizing mission), it “was designed to showcase products of the industrial age and further the Exhibition’s goal of giving people ‘a living picture of the point of development at which all nations will be able to direct their future exertions.’”⁵³ Britain’s “virtuous” project of global domination sought to materialize its vision of a Eurocentric social order, and it had all the military and economic weight needed to institutionalize its system of racial and economic subjugation. They were hardcore believers in the mimetic value of their civilization, advocating for fictive unity and imaginary kinship with those who would (be forced to) give up everything to be made in their image. The Crystal Palace, an architectural and engineering feat that echoed British imperial subjectivity, positioned itself as both aspirational and unattainable. It thus produced an affect of difference parallel to racist and imperial discourse, in that this crowning technological achievement can work to simultaneously motivate becoming and militate against ever being.

On November 30, 1936, crashing glass and hissing fires became the last sounds to echo in the halls of the Crystal Palace. They roared for many miles and many hours, summoning a

⁵² Stoler, "Imperial Debris," 194.

⁵³ Cantor, "Science, Providence."

crowd of Brits that was a spectacle in and of itself. However, built as a “didactic, patrician space that would better the tastes of its visitors,” while doubling as a “populist spectacle,” its ruination was not an overnight phenomenon. British historian James Boaden argues that the Crystal Palace was in a state of decay since its very inception. Its magnificent courts showcased “fragmented representations of toppled empires of the past – that of the Ancient Egyptians and Greeks, Romans and Moors— they were contained within an edifice that seemed to assert the ruin of the British Empire itself. The remains of the fire, then, were a ruin of a ruin.”⁵⁴ Rumors have been spread that even Winston Churchill traveled to the site to gaze upon the fire. And that he muttered the prophetic phrase: “the end of an age.”⁵⁵

The Crystal Palace Incarnate: The Heterotopic Space of Infomart

Opposing the fantasy of utopia, Michel Foucault frames heterotopias as “counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found within the culture, are simultaneously represented, contested, and inverted.”⁵⁶ A utopic space has no place on a map, yet inspires myth-making in its im/perfect form. On the other hand, heterotopic spaces secretly undermine language, reflecting the “joint, mixed experience” of a mirror image: it can hold many truths. Notwithstanding critiques of his theory, I am drawn to Foucault’s heterotopia as an analytical tool for understanding Infomart’s changing function in relation to the Dallas high-tech economy, and networked culture generally. I hope to adapt his concept to explore the machinations of Infomart as it houses the collisions in rationality

⁵⁴ Boaden, “Peculiar Pleasure,” 145.

⁵⁵ Despite being referenced in dozens of magazine articles and blog posts, I have been unable to locate the original source for this quote. However, I believe it is still worth mentioning even, or especially as a rumor.

⁵⁶ Foucault and Miskowiec, “Of Other,” 24.

produced and productive of neoliberal governmentality. Every iteration of Infomart's business model manages a different kind of other, coloring its space with both repugnance and fascination. It harbors ruined dreams. It shelters the entrails of the internet. It contains the awkward end of one era and the rushed start of another. The information encoded in Infomart's structure generates its heterotopic value, which accumulates as a site of ruination. It condenses "alternative senses of history" not through material decay, but through traces of agency in the processes of worldmaking.

Nearly half a century after the Great Fire, Dallas's Palace of Information was built. More than a replica of the Crystal Palace, it was a \$92 million gamble.⁵⁷ According to the 2001 brochure, its architect, Martin Growald, hoped to retain "both the architecture and the "spirit and forward-thinking purpose" of the original skyward vision. Just as the Crystal Palace showcased the marvels of the Industrial Age, Infomart's developer Trammell Crow prophesied his Palace would highlight the wonders of the Information Age, accelerating the growth of the Dallas tech industry and "forever [changing] the way computers and computer byproducts are marketed."⁵⁸ The 1983 October issue of *Computer World* ranked Dallas's computer market the fifth largest in the country. Crow was not just making a bet on the future of Dallas. He was betting on a new kind of futurity: one of technological solutionism, of global markets, one that innovates by wrapping semiconductors in plastic casing. Things looked promising when, as of 1984, Texas Instruments, AT&T Information Systems, Televideo, Xerox, and IBM all planned to lease space in the building.⁵⁹ For all its posturing as a grand embodiment of the Computing Age, its

⁵⁷ There is actually a range of prices, from \$92-98 million, depending on the source. I use Tim Allis's "What's an Infomart?" for the number I list.

⁵⁸ Lane, "Silicon Prairie," 12.

⁵⁹ Allis, "What's an Infomart?"

marketing style mimicked that of its Market Center neighbors. Reminiscent of the Great Exhibition's eclectic spatial arrangement, companies were expected to lease exhibition space, ultimately assembling a variety of vendors inside the palace. Treating computers as retail merchandise, it was intended to be a "high-tech bazaar" organized into showrooms, exhibition spaces, and meeting rooms, all fully furnished with state of the art computing and telecommunications equipment.⁶⁰ In its name, design, and promise, the Palace of Information housed congruent ambitions with those of its nineteenth-century predecessor.

Upon its day of opening in January of 1985, Infomart was already a ruin of its own ambition: less than half of its exhibition space was filled. Infomart was but one of many failed investments that year. Watching global developments in the microelectronics industry, we can identify one of the root causes: the false narrative of progress pursued by the American computing industry. In 1979, Jerry Sanders coined the phrase: "semiconductor technology is today's crude oil."⁶¹ And the United States wasn't the sole competitor fracking in this new field. By 1985, the Semiconductor War with Japan had come to a head: America's computing and semiconductor industries were in critical condition, causing brutal layoffs and a reevaluation of Moore's Law, the holy grail of computing electronics. After all, according to Gordon Moore, "the future of integrated electronics is the future of electronics itself."⁶² In its twenty-year company overview, Intel's Annual report from 1988 reads: "Intel would probably as soon erase 1985 from the history books were it not for the introduction of the 386 microprocessor."⁶³ Governing semiconductor development from the late seventies onwards, Moore's Law propelled

⁶⁰ Ibid.

⁶¹ Schuyten, "Subculture of Silicon," Technology.

⁶² Moore, "Cramming More."

⁶³ *Intel: Architect.*

industry-wide innovation in a single direction: smaller, faster, and therefore cheaper. As Intel's marketing manager for microprocessors, David House believes he "was selling futures" and Moore's law "was a great way to talk about the future."⁶⁴ Japan outcompeted U.S. integrated circuit manufacturers by following their own roadmap to innovation: development metrics based on product performance, not transistor count. Their research and development not only outpaced that of the United States, but their semiconductor quality was consistently better. Once Japan assumed the position of global dominance, Intel and other American manufacturers were forced to realize "there was nothing inevitable about [Moore's] law and its evolution."⁶⁵ Despite being a flawed strategy, Moore's law represents strategy nonetheless: as Giles Slade writes, "although Moore's Law was intended to emphasize the increasing power and the diminishing costs of integrated circuits, it also provided an index to the steady rate of technological obsolescence... [microchipped] devices were truly self-consuming artifacts, since their desirability diminished automatically."⁶⁶ These dual pursuits of speed and miniaturization persist in electronics design and manufacturing today.

Infomart's response to the semiconductor crisis is a testament to its heterotopic dimension: it houses the anxieties of an industry built on a narrow vision of progress. And in doing so, we can sense a tinge of decay. While it manages to survive by adapting its business model, as we shall see, the utopian facade of the new age begins to crumble. The agency which realized its original intentions has entered a cycle of continual displacement: it cannot imagine futurity without risk. While taking a risk can be argued as the ultimate exercise of agency, entering a game where

⁶⁴ Lécuyer, "Driving Semiconductor Innovation," 11.

⁶⁵ Ibid., 26.

⁶⁶ Slade, *Made to Break*.

every move is a gamble may not actually constitute the same experience of liberty. Infomart is a secular temple of disavowal: the agency to dream, specifically to dream for the whole, is continually deferred to those whose ambitions fail us. The impact of the unstable semiconductor industry in the eighties on Infomart, and the Dallas economy, is just one of many acts in the ongoing play.

In an attempt to recuperate its losses, Infomart shifted its focus from the hard sell, computer hardware, to the new big thing: fiber-optic technology. Thanks to the “advanced fiber-optic network that ran beneath the building’s patterned wood floors,” it found a new market in supporting the nation’s rapidly evolving telecommunications industry. By utilizing the infrastructure of the building itself, this strategic move brought Infomart’s occupancy up to sixty percent in 1988.⁶⁷ This statistic remained stagnant into the early nineties.⁶⁸ At this moment, Infomart executives realized that the value of its castle had nothing to do with the sheer number of customers it could attract—window shoppers were of no use. Services were in demand, not retail products, and providing critical infrastructure appeared much more secure than worrying about fads in consumer electronics. By 1994, Texas’s high-tech industry was an entirely different beast: electronics manufacturing was no longer top dog. IT services was winning the race. Industry employment was skyrocketing, with more than half of Texas’s telecom and high-tech jobs finding their place in Dallas-Fort Worth.⁶⁹

⁶⁷ Lane, "Silicon Prairie," 20.

⁶⁸ Ibid., 24.

⁶⁹ Ibid., 27.

The Information Superhighway



Screenshot from this 1985 video, *Looking Ahead to the Information Age in 1985: AT&T Archives*, which features one of the first uses of the term "Information Superhighway".⁷⁰

Metamorphosing from a covert military information network into a commercial enterprise, the Internet opened new terrain for financial investment. As the moniker 'information superhighway'⁷¹ implies, it is a form of communications infrastructure, and thus possesses a physical dimension. Since American manufacturing was a less desirable investment at this time, Venture capital firms spared no hesitation in funding the excessive number of tech start-up and dot-com companies that began popping up. An amalgamation of loose monetary policy was also legislated, notably through the Taxpayer Relief Act of 1997 and the Telecommunications Act of 1996. While each of these laws stimulated an increase in high-tech jobs, they also sought to incentivize the flow of capital through a deregulated market. The Clinton administration's "third-way liberal agenda" was guided by a wish to "let the private sector lead" in the

⁷⁰"Looking Ahead to the Information Age in 1985: AT&T Archives," video, 18:31, YouTube, posted by AT&T Tech Channel, June 21, 2012, accessed April 8, 2023, <https://www.youtube.com/watch?v=qWsC9KE-PHY>.

⁷¹ There are contested origins of this claim, the most popular being Al Gore in 1978, Nam Jun Paik in 1974, or Ralph Lee Smith in 1972.

deployment of the Internet. This marked a shift from the regulated monopoly model of telecommunications—the same model which had previously broken up the Bell System—to a competitive model of market-based provisioning. Investors expected survival on the basis of monopolistic dominance, especially given the minimally regulated functions of this “New Economy”, characterized by its imagined break from the expectations of its industrial counterpart. By casting wide nets, their enthusiasm was motivated by the hope of having chosen the eventual winner. These developments were driven by financial speculation and expressed in high levels of stock valuation. The imperative for profit latched onto the possibilities afforded by getting people and businesses online. Following the precedent set by Moore’s Law, these investors adopted a “growth before profits” model, meaning that companies were injected with capital even if they lacked a clear or consistent source of revenue.

Come 1997 and Infomart’s occupancy jumped to nearly 70%. Over the span of the next three years, technology stocks would reach a market capitalization of \$5 trillion. And Infomart would be near maximum capacity just two years later, hitting almost 90% occupancy.⁷² With the need for reliable telecom services to safeguard the infantile Internet, Infomart solidified its role in Dallas’s burgeoning high-tech industry. In September of that very year, NeXcomm Capital Partners bought Infomart for an estimated \$95 million. One of the leading brokers of this deal, Jack Crews, stated that he was really

selling the industry more than the building...the biggest thing was getting people to believe that a large piece of real estate built for one dimension had evolved into another type of technological usage, so that the real estate itself was really secondary in the sale.⁷³

⁷² Lane, "Silicon Prairie," 25.

⁷³ Perez, "Iconic Infomart."

At this moment, the Palace of Information was no longer a site of pilgrimage. It had abandoned the old rituals of worship. The gods of commerce assigned it a more sacred task: Infomart would be a vessel. Seduced by the utopian implications of the new economy, its buyers believed in the value of what Infomart signified, not what it actually is. We can now understand what Carrie Lane is talking about when she says that Infomart's shift into information processing mirrored the nationwide transition into a post-industrial information economy.⁷⁴ Post-industrial, knowledge-based, post-modern, virtual, networked—these are all prefixes used to describe a new society, one that people believe is discontinuous with the industrial world and its technological, economic, and social structures. But this disavowal of continuity does not prevent the predictable outcome.

The Silicon Prairie Survives the Dot-com Bust

The Internet bubble burst was a soft punch to the Dallas tech economy, especially considering the uppercut and drop-kick combo that socked Silicon Valley. For the next two years, its diverse investment portfolio, which included dot-com, manufacturing and telecom companies, would shelter Dallas's finance and labor markets from enduring too much hardship. While Internet companies were forced to declare bankruptcy in Black Friday's wake, telecom companies lived on. Investors less-inclined to indulge in the risky behavior exhibited by advocates of the New Economy had designated telecom as the safe high-tech alternative. Lane observes that "the collapse of dot-com stocks actually prompted a surge of new investment in

⁷⁴ Lane, "Silicon Prairie," 20.

telecom, as many investors optimistically traded their shrinking shares of Internet stock for a piece of the telecom pie.”⁷⁵

It was in this liminal moment, right after escaping catastrophe and right before facing it, that Dallas was named “the third coast of e-commerce” by D Magazine. The cover of the December 2000 issue reads: “Silicon Prairie Stakes Its Claim”. In Lane’s recounting of this dream come true, she fails to account for its timing. In reality, the bubble was rapidly deflating. I believe that the acclaim implicitly values Dallas’s tech industry not for its great strides in innovation since the crash, but its ability to survive. The article refuses to acknowledge the dreary reality of nation-wide lay-offs and shut-downs, instead praising the benefits of cheap real estate and successes of local dot-com ventures.⁷⁶ But after finally earning the honor of being named a Silicon Valley spin-off, Dallas’s tech industry would experience a devastating downturn.

During the Dot-com Boom, an estimated \$500 billion dollars were spent on expanding the fiber optic networks and growing wireless networks across the country. This project was pursued on the fair assumption that Internet traffic would increase ten-fold each year, and the false assumption that the efficiency of the hardware would remain consistent. More and more of the network was rendered redundant as engineers increased the number of signals a single fiber could carry nearly a hundred-fold. By 2002, the telecom industry had quickly slimmed down: “share-holders in the industry have lost roughly \$2 trillion while half a million workers in the industry have lost their jobs.”⁷⁷ Dallas, too, was in mourning:

⁷⁵ Lane, "Silicon Prairie," 26.

⁷⁶ Allis, "What's an Infomart?"

⁷⁷ Lane, "Silicon Prairie," 26.

The city lost 10,000 high-tech jobs in the first six months of 2001, 7,000 of them in telecom. By the end of 2002, the Dallas area had lost 25,500 jobs, and by 2003 Dallas County had lost more jobs than any U.S. county besides Santa Clara County, the heart of Silicon Valley. By mid-2004, a full 19 percent of the nation's technology jobs had disappeared since the recession began in 2001. Dallas was even harder hit; losses there were closer to 30 percent, a full third higher than the national average.⁷⁸

The labor market was tight. Businesses were failing. Dallas was becoming a site of abandonment: "the Dallas metropolitan area was home to 2.86 million square feet of unoccupied office space" by the end of 2001. Our worldmaking practices were not sustainable, nor were they shaping our built environment after our heart's desires. However, they are still acts of emplacement, as Foucault would say, in that they are nevertheless deliberate—not an act of divination. This choice to shape Dallas into a Silicon Prairie had to be rationalized in some way. Networked technology promised to transport us to tomorrow's world, but tomorrow's world was an empty promise. As Lane succinctly puts it: "Infomart's resilience, then, stemmed from its timely divorcing of its own prospects from those of the Dallas labor force."⁷⁹ To profess the necessity of these developments to usher Dallas into the Information Age, to cash-in on the hot new thing, to become the next Silicon Valley, we had to disavow the often predictable, often unsettling consequences. By disavowing the continuity between the post/industrial economies, we enter the ambivalence deep within the normative ideals of neoliberal governmentality. Boom and bust cycles are wholly preventable phenomena. The continuous disavowal that the violence of job insecurity is not enough reason for economic reform, or that economic reform has no role

⁷⁸ Lane, "Silicon Prairie," 29.

⁷⁹ Lane, "Silicon Prairie," 16.

at all in this violent process, is one of the many wonders exhibited in the empty halls of Infomart today.

Since the late 90s telecom boom, Infomart was leasing less “people space”, opting instead to shelter the switches, servers, and other infrastructural needs of telecom companies. Even as telecom companies began transitioning to leaner business models by slashing employment, they still needed a storage solution for their equipment. As a data center, it would potentially serve infinitely more people than as a trade show space. Hollowed out, does it return to its original state of vacancy, or enter a new state of ruin? Perhaps it has been undergoing ruination since its inception. Evoking wonder and shame simultaneously, these ruins exemplify the dual nature of labor in an information economy: flexible and disposable, redundant and precarious. By 2006, Infomart was sold in foreclosure to DCI Technology Holdings. The cause of foreclosure is not entirely clear from articles written at the time, especially since its new owners did not make any significant changes to its business model. However, the rebrand they implemented was very persuasive: the Palace of Information would become a carrier hotel.

One of the “early cornerstones of the Internet economy”, carrier hotels provide the infrastructure needed to tie networks together in the financial centers of large cities.⁸⁰ Internet exchange points require ample resources to run: server storage, cooling capacity, and uninterruptible power to manage the overabundance of data flowing in and out. Infomart ensures that all the servers under its roof have steady connectivity, reliable power sources (emphasis on plural), and climate control mechanisms to keep them from overheating. Referencing the works of Al Gore and Kevin Kelly and other techno-utopian thinkers, historian Nathan Ensmenger

⁸⁰ Miller, “Carrier Hotels.”

argues that the “alleged immateriality of the ‘information superhighway’ was often explicitly contrasted with the physicality and resource demands of its industrial era equivalents.”⁸¹

Resource-hungry for water and fuel, infrastructure like the server farm proves this break between post/industrialism is not so clean, and is certainly not cheap. Telecom companies, such as network providers and cloud services, are the most common clients of carrier hotels. Hosting a variety of businesses, part of the hotel’s responsibility is connecting clients with one another at both reduced cost and complexity. One of Infomart’s distinguishing features as a carrier hotel is that it is a co-location center, meaning the equipment, space, bandwidth, and security are the only assets being leased. Each client does its own system administration; something like parasites, all they need from the carrier hotel is a safe, flexible, and scalable environment for hosting.⁸²

At the time of writing, Infomart is ranked the seventh for America’s “most interconnected” data centers. The original strategy behind infomart relied on its position relative to the interstate highway. Today more profitable, more resource intensive, and arguably more useful than before, its strategy of resilience relies on its position relative to the information superhighway. In its current form, Infomart is a deviation of the digital age, and also its truest embodiment. Or, rather, by housing the vital organs of the Internet, it epitomizes deviance: it is proof that the Internet is not elsewhere, but somewhere. Driving on the highway and passing by Infomart, it appears to be a skeleton of the nineteenth century, its muscle and tissue withered by the force of a single question during casual conversation: *do you even know anyone who’s been inside?* Our gaze renders it a thing of the industrial era. And just as the term post-industrial conceals the

⁸¹ Ensmenger, "The Environmental History of Computing," s9.

⁸² Cologix, "Carrier Hotels," *Cologix Resource Library* (blog).

materiality of information technologies and the New Economy, the heterotopia of Infomart hides the Internet from public view while keeping it in plain sight. As Nathan Ensmenger argues in *The Environmental History of Computing*:

The vast material infrastructure that makes [the network] possible has been deliberately dematerialized and disappeared by technology companies into the ethereal and commodified Cloud...Where so many of humankind's other great technological accomplishments have been compromised by war, disease, pollution, and other unintended and undesirable consequences, information technology does appear to be clean, safe, and of relatively low impact on the environment. Indeed, the seemingly inexorable march of Moore's Law toward smaller, faster, and more powerful computers serves for many in the Western world the last remaining remnant of our long tradition of technology-driven utopianism.⁸³

Here I emphasize that Infomart is not actually utopic, but heterotopic. Unlike a utopia, it is a real space. The Internet, too, is a real space. Traces of agency are detectable in the spatial configuration of its infrastructure: they map out the contours of our digital present, revealing how it is continuous with our industrial past (and contingent on a displaced industrial present). Similar to how considering Dallas's fancy highways, tax incentives, and cheap land is a must for understanding the birth of Infomart, we must consider that the choice of place for any Internet infrastructure is also a matter of social and geopolitical topology. The everyday user's disavowal of the environmental and economic impact of computer technology works through heterotopic spaces like Infomart: they quarantine the blistering hot machines so that our romantic vision of

⁸³ Ensmenger, "The Environmental History of Computing," s9.

the Internet can stay pleasant and warm. This resonates with Ensmenger's belief that "by making the physical world increasingly irrelevant, information technologies allow us to avoid confronting the consequences of our actions on the environment."⁸⁴ In this way, the carrier hotel represents and contests our ordering of space. It manages the unseen Other—the wires, cables, generators—while undoing the world around it: "if the Cloud were a country, it would be the sixth largest consumer of electricity on the planet."⁸⁵ By isolating the deviant aspects and undesirable outcomes of digital technology, Infomart is a subtle machine of discipline.

Dallas's Palace of Information was acquired in April 2018 by Equinix, one of the world's largest digital infrastructure companies with data centers spanning across five continents. Because the city is a major interconnection point for Latin American internet traffic, Infomart was a key acquisition for their expansion into the Latin American market. The company justified the near \$800 million expenditure with a conviction that it will "further strengthen" their "global platform":

The Equinix Dallas IBX data centers offer access to Equinix Cloud Exchange™ Fabric (ECX Fabric), an on-demand platform that enables Equinix customers to discover and dynamically connect to any other customers across any Equinix location globally... By reaching their [network service providers, cloud service providers and SaaS providers] entire digital ecosystem through a single private and secure connection, companies can rapidly scale their digital business operations globally.⁸⁶

⁸⁴ Ensmenger, "The Environmental History of Computing," s26.

⁸⁵ Cook et al., *Clicking Clean*.

⁸⁶ "Equinix to Acquire."

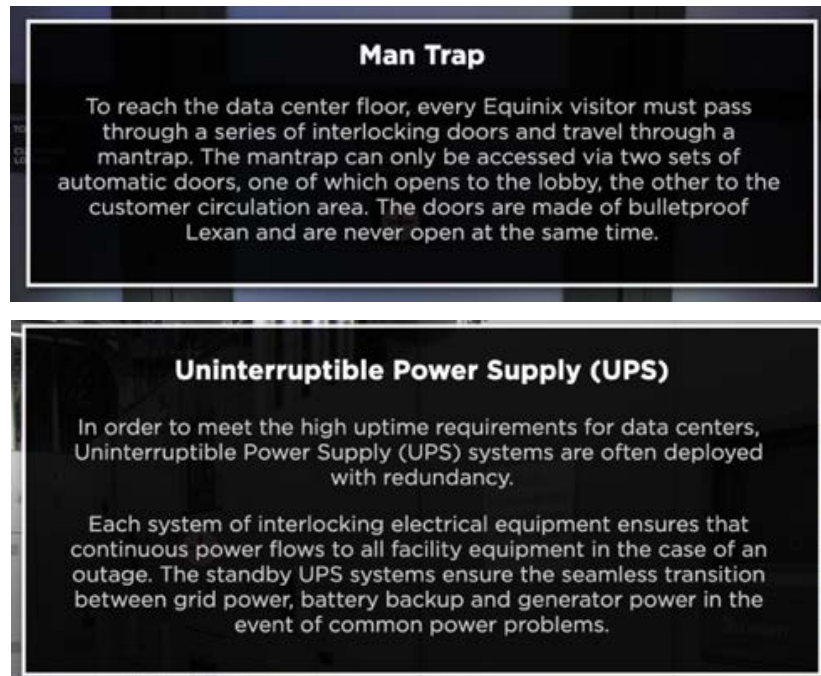
Providing hospitality services for the physical dimension of the Internet, Infomart houses the ruined dreams of a decentralized information network. Equinix views itself as a platform, and although it does not neatly fit into the category of *digital* platform, there are interesting insights to gain from viewing Equinix's acquisition of Infomart in these terms. First, Nick Srnicek's analysis of the doublespeak of digital platforms: "While often presenting themselves as empty spaces for others to interact on, they in fact embody a politics... In their position as an intermediary, platforms gain not only access to more data but also control and governance over the rules of the game."⁸⁷ Infomart as carrier hotel implicates it in the competitive dynamics of the digital marketplace: while data centers may not explicitly provide services to users, they do maintain the spatial and economic arrangements necessary for digital platforms to serve. The fast growth rate of the digital platform can be attributed to its im/materiality: it does not need to build new factories or pay for engineers, it only needs to rent more servers.⁸⁸ The competition here is ultimately over the ability to build the monopolistic platform for colocation services, providing the hardware needed to operate an industrial internet. By providing the material counterpart to the digital platforms, data centers aid the digital platform in obscuring its physical existence, and thus the general public in disavowing the environmental impact of computing technology. Equinix is thus able to legitimize its monopolistic pursuits, like its acquisition of Infomart, by promising uninterrupted and speedy exchange, state of the art security, and a convenient hush concerning resource allocation.

The cloud is a factory, and the factory lies behind Infomart's castle walls, where all data is owned, analyzed, and commodified. Foucault describes heterotopias of compensation as real

⁸⁷ Srnicek, *Platform Capitalism*, 31.

⁸⁸ Ibid.

spaces which are “as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled.”⁸⁹ Under the ownership of Equinix, Infomart achieves picturesque orderliness: multilayered security systems (biometric readers, security guards, man traps), constant video surveillance of the premises, even an uninterruptible power supply (UPS). The redundant design in its protective measures exposes the shortcomings of American worldmaking. While there is no guarantee that you can afford your insulin, pay off your student loans, or own your own home, at least Amazon, Google, and Meta won’t burn to the ground like the Crystal Palace of old.



Screenshots from the Infomart interactive virtual tour provided by Equinix on their company website.⁹⁰

Infomart’s multi-million dollar security system aligns with Foucault’s claim that heterotopias “always presuppose a system of opening and closing that both isolates them and makes them penetrable.”⁹¹ Equinix is able to completely control physical movement to, from,

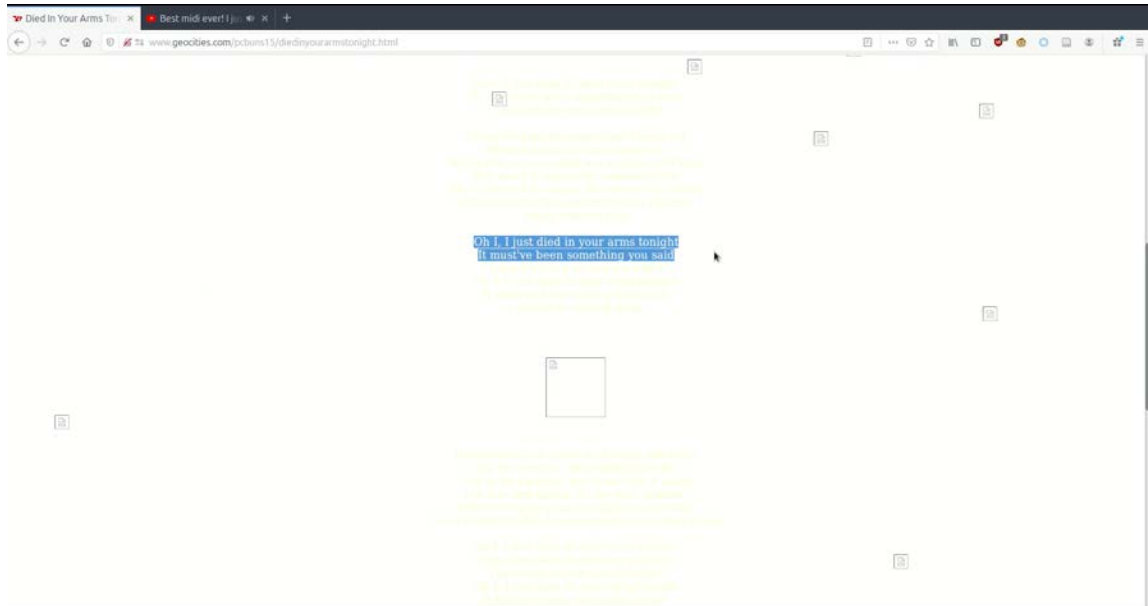
⁸⁹ Foucault and Miskowiec, "Of Other," 27.

⁹⁰ "DA1: Dallas," Equinix. Take a virtual tour of Infomart [here](#).

⁹¹ Foucault and Miskowiec, "Of Other," 7.

and within Infomart: entrance is granted only through the enactment of a performance ritual even more rigorous than going through TSA for an international flight. Meanwhile, through nearly invisible protocols for directing Internet traffic—which are also hyper-visible in how they shape access to information and movement across networked terrain—they enact the same function in Infomart’s networked counterpart. The user-end ritual of entering Infomart depicts a different system, but a performance nonetheless: distributing agency and animating the avatar. Dwelling in its castle walls is a parallel world that makes utopia possible in the minds and bodies of users, one that houses dynamic alliances between economic domination and personal choice, virtual and physical, innovation and ruin.

Part II: Survey of Digital Ruins



Screenshot from “[died in your arms tonight](#)”, a screen recording of x’s GeoCities homepage. The video was posted by Olia Lialia in 2019 as an homage to the site.⁹²

Digital ruins constitute landscapes: the empty town square, crumbling highway system, and defunct amusement park which persist after the blast of “the second bomb”.⁹³ Though it is the offspring of the hydrogen bomb, this silicon bomb does not ostensibly annihilate. In the wake of WWII and the nuclear atrocities which defined it, certain postwar logics—like how we organize governments, fund militaries, build our cities—emerged in response to deal with the anxieties of this new and uncertain age. In different ways, the first and second bombs both implicate people, institutions, and information within a global schemata: ecologies, bodies, and time are in sync yet out of scale. The electronic bomb which followed produced its own logics, too, in terms of how we organize labor, extract resources, disseminate knowledge and make

⁹² “Died in Your Arms Tonight,” video.

⁹³ Virilio, “Speed and Information.”

believe. These bombs are not restricted to a single dimension of time: they produce immediate and gradual effects. For this discussion, I would like to address this range of temporality and its contributions to processes of digital ruination. I switch between numerous perspectives on time, such as real-time, nonsimultaneous time, and compressed time, in order to convey the polyvalent signifier that Robert Hassan names “Neoliberal Networked Time”.⁹⁴

While images of nuclear wastelands tend to signify alienation and dread, the landscape of digital ruination tends to complicate the meaning of alienation. In networked spaces, staged in a scene of obsolescence, we are actually at home with alienation. Although the Internet has internalized the idea of nuclear war, perhaps as we all have, it transformed the wasteland—the most familiar metaphor for atomic fallout—not into a pretext simply for scrutiny, but into a new strategy for pursuing unexplored modes of being. In the networked labyrinth of decay, the words of Rose Macaulay echo: “in ruined palaces there lies a peculiar pleasure.”⁹⁵ The avatar is the quintessentially atomized individual under neoliberal digitality, but this alienation pushes up against the corrupt and homogenizing forces governing the network’s topology. Digital ruins are perilous in their own right, as we will see, but I believe we must also attend to the creative possibilities they offer in order to unpack their effects on our networked subjectivity. The centrality of avatarship in my argument investigates this matter, too, by incorporating the notion of play.

The im/materiality of ruins is a useful dimension for comparing it to earlier iterations of ruins. In the words of Karen Barad, “matter fell from grace during the twentieth century.” Writing of nuclear hauntings and ecologies, she asserts that “the inanimate became mortal” when

⁹⁴ Hassan, “Time, Neoliberal.”

⁹⁵ Macaulay, *Pleasure of Ruins*, 1.

it evaporated thousands, who then fell from the mushroom cloud, in the form of acid rain.⁹⁶ The immaterial was contaminated by reality. Digital ruins are reminders of the Internet's im/materiality, the tension between what is said and what is felt, what is created and what is caused. While digitality seeks to disavow its material life as a resource-hungry environmental contaminant, at the levels of production and consumption, its materiality is undeniable. We observe its expression through the intercorporeal avatar and the limits imposed on the archive by a market of innovation and obsolescence. Just like their physical counterparts, digital ephemera are, too, susceptible to processes of decay—be they market forces or the rapidly changing tastes of Internet users (not that these are two unrelated phenomena). As previously discussed, the material dimension is most intimately felt by the avatar, which comes to life through a cybernetic assemblage of machine parts, human senses, and distribution of agency by means of this colliding matter. The interfaces between software and satellite, CPU storage and human memory, computer and avatar produce a stable feedback loop of many smaller circuits. I propose we evaluate digital ruins on the basis of interactivity, observing when the feedback loop is out of joint and ruination sets in. An undercurrent I thus identify is that ruination is guided by more than fluctuating economic forces: user experience, personal taste, and community building co-constitute the process.

What of the ghouls? Barad states it clearly: “matter is spectral.” To speak of digital ruins, we conjure ghosts from every corner of the Internet: the military authorities who first imagined it in the midst of a Cold War,⁹⁷ the ambitious fanfiction writer that didn't get a book deal,⁹⁸ the

⁹⁶ Barad, "No Small," 103.

⁹⁷ See ARPANET, the state-funded military project that was the precursor to the Western Internet.

⁹⁸ The Twilight series began as a fan fiction.

touchscreen devices that couldn't compete with Apple products, or the scorned Vine stars who curse Tik Tok influencers being in the right place at the right time. These specters do not resign themselves to the wastelands, though. They are present in every mouse click, browser cookie, and custom skin. When we log online, we willfully situate ourselves inside of a haunted world. Networked activity is a confrontation with ruin, which in turn is a confrontation of lost futures. My primary application of this hauntological framework happens in my analysis of Adobe Flash (Part III), but it comes into play within this chapter, as well.

Digital ruins are not monolithic. Following are three models of digital ruination, each with their own processes, materialities, and temporalities: *Sites/sights of Ruination*, *Cycles of Dust and Debris*, and *The Deprecated Platform*. I propose these three models of digital ruination in order to flesh out their inner workings, contradictions, and commonalities. Furthermore, each model has a unique relationship to ancient, imperial, and post/industrial ruins. My survey also hopes to make up for the lack of academic concern for digital ruins and position it within the media archaeology field, if only to borrow its audience.

The only piece of literature⁹⁹ on this topic that I encountered during my research was Vincent Miller and Gonzalo Garcia's 2019 journal article, *Digital Ruins*. While their argument is mesmerizing, its limitations are apparent. For one, it only considers post/industrial ruins as a reference point, neglecting considerations of ancient or imperial ruins. Though their focus is in the architectural space of digital ruins such as abandoned MMOs, which is obviously a *virtualized* world and thus its simulated-ness foregrounds any investigation, they fail to attend to the latent materiality or critical temporality. All of that being said, they do conclude by saying

⁹⁹ Numerous YouTube videos exist recounting tales of "lost media" and "dead games", but none apply the language of ruination, and tend to be more artistic than academic in style.

that “virtual worlds are not the only digital ruins, but merely *one phase* [emphasis added] in a series of virtual endeavors in which people invest time, emotional effort and creativity, and from which they move on.”¹⁰⁰ So, charting new territory on the map Miller and Garcia have provided, with faith that someone else will pick it up after I finish here, we will now begin our tour of digital ruins.

Ruins of a Great House, Derek Walcott

“ . . . A green lawn, broken by low walls of stone,
Dipped to the rivulet, and pacing, I thought next
Of men like Hawkins, Walter Raleigh, Drake,
Ancestral murderers and poets, more perplexed
In memory now by every ulcerous crime.
The world’s green age then was a rotting lime
Whose stench became the charnel galleon’s text.
The rot remains with us, the men are gone.
But, as dead ash is lifted in a wind
That fans the blackening ember of the mind,
My eyes burned from the ashen prose of Donne.”¹⁰¹

Ann Stoler opens with this very same excerpt in *Imperial Debris: Reflection on Ruins and Ruination*. She calls on Walcott’s talents to reframe our conversation of empire to one of imperial formations, highlighting the “ongoing quality of processes of decimation, displacement, and reclamation” which manifest as allocations, appropriations, and states of deferral.¹⁰² Following suit, I look to this poem for understanding how processes of digital ruination are continuous and ongoing, too, and what “rot remains” when “the men are gone” in a networked

¹⁰⁰ Miller and Garcia, "Digital Ruins," 452.

¹⁰¹ Walcott, "Ruins of a Great House."

¹⁰² Stoler, "Imperial Debris," 193.

setting. In accomplishing this task, we return to the figure of the avatar, which helps us chart the *flows* critical to the survival of networked technology: play, agency, and attention. When the user stops logging on, cancels their subscription, or migrates to a hot, new platform, they halt the flow of capital. Oftentimes, without the avatar to keep the platform feasible, corporate interest wanes: if there aren't people in it, there's no money in it (see *The Deprecated Platform*), and we are left with digital artifacts that are incomplete or unplayable. However, not all digital ruins follow such a simple logic: some digital ruins persist wholly intact in spite of this absence (see *Sites/Sights of Ruination*). Still, each model nevertheless implicates the avatar as the mediator of networked activity.

I argue that Walcott's juxtaposition of the persistent ruins with an absence of bodies conveys the digital ruin as something akin to more traditional ruins—moving us to remember not only what once was, but who inhabited it. Neither he nor we are concerned with an imaginary past or a romantic dream of restoration. Instead, we are made aware of the vagaries of the visions that were, at some point in time, evaluated as virtuous, progressive or empowering. From the past and present position of imperial formations—like delayed autonomy or military intervention in the name of democracy and human rights—specters of imperial glory haunt Walcott's fictional (but very real) ruins. Similarly, specters of cyber-utopian ambition, which possess the seductive promise of simulation that leaves the carnal meat behind, or sleazy pledge to protect democracy discourse, haunt digital ruins.

“When the men are gone,” or when the digital ruin has either anticipated or sustained critical injury due to the willing or forced migration of the avatar, *exposed nerves* are revealed. They litter the digital landscapes like pipes jutting out from a freshly sledge-hammered wall.

They are curious like wires hanging from spots on the ceiling you didn't realize could be anything except foam tiles with a two-inch coating of dust particles. They hold new promise. As we gaze upon digital ruins, are we witnessing a construction site, or demolition site? The demolished parts look like they could double as construction sites. Is the wire about to be torn out or tucked in? But the intensity of separation between avatar and machine actually creates two sets of *exposed nerves*: the ruined technology and the ruined network.

The avatar's *exposed nerves* can heighten or dull its sensitivity to the fallout after the electronic bomb strikes. On one hand, the avatar might seek greener pastures, a more durable home to ride out the next storm. If not a new home, perhaps it abandons this desire altogether, opting instead for a migratory lifestyle as it sets out to fulfill other digitally mediated appetites. In either case, the expectation is clear: engaging in networked activity does not make us aeromancers or oracles, it makes us doomsday preppers. Depending on the migratory path of the avatar, though, ruination either becomes something conveniently located on the other side of the walled garden, or a collective struggle to join. For *exposed nerves* which feel more like a paper cut or a chipped tooth, a heightened sensitivity ensues. In choosing fight over flight, gut reaction governs the avatar's impulse to intervene in the ruination process and preserve what's left, be they memories, artifacts, or the means of play itself. This is not a territorial dispute; rather, it actually looks a lot like the issues that arise in the world of archiving.

The *archival impulse* I point to is somewhat aligned with the modern urge to create an archive of the absolute in an attempt to strive for totality; however, this dream is not born of cultural tradition or in response to national tragedy. Jacques Derrida's *Mal d'Archive* points out the false assumption of the archive—that an archive can ever be complete—by describing the

curated manner in which certain traces are *selected* for preservation. This selection process necessarily discards other traces.¹⁰³ The reality is that the archive cannot guarantee protection of every memory, but this fear of loss and ensuing madness portrays this “fever” as a “form of physiological resistance against death.”¹⁰⁴ Archive fever in the networked world is certainly a continuation of its obsessive twentieth century counterparts. However, it is less concerned with collective memory, manifesting instead in networked autofiction through incessant content production and unrelenting self-expression. Not a single thought goes un-Tweeted, meal goes un-Instagrammed, political take un-posted on Facebook. As the avatar is itself wrapped in fictions of the self, the madness is redirected inwards and self-preservation acts as a cool, damp towel to wipe away the feverish sweat. Just like autofiction problematizes the distinction between reality and what is presented as real, the avatar problematizes the distinction between the real and virtual. Both make *and* make believe the actual. The avatar seeks to archive fragments of a world conceived of as ungraspable. Our *archival impulses* do not permit closure.

Those of us who came of age during the rise of the Internet possess the same neural pathway engraved upon the pink matter inside our skulls: *once on the web, always on the web*.¹⁰⁵ With the expectation that the Internet automatically preserves our data, like some divinely assigned task or natural bodily function, it is easy to forsake archival techniques or obscure its associated costs and labor. Over the course of our networked lives, we frequently encounter the “404: Page Not Found” and its brothers in ruin. Therefore, I speak of *archival impulses* as the moments in which users are compelled to act quick and smart, or risk unpronounced loss, and

¹⁰³ Derrida, *Archive Fever*.

¹⁰⁴ Lopez-Gay, *True Fictions*.

¹⁰⁵ Gayatri Spivak has described the internet as today’s “Great Archive.” Hal Foster has also argued that for the Internet as the “mega-archive.”

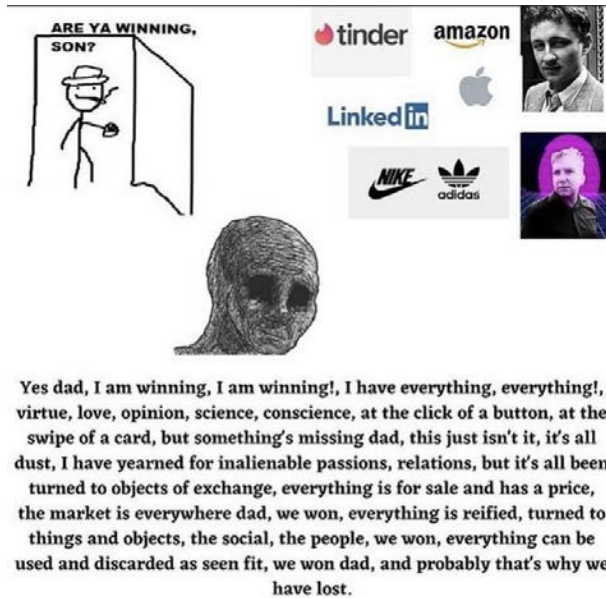
choose to resist the ruin. Networked activity, or avatarship in general, is not only a play of bodies, but a play on epistemic totality. But when it comes to digital media that is closed source or privately owned, like commercial video games or design software, who should take responsibility, and who actually does? As we will see, users are often burdened with this task, ungluing the “conflation of memory and storage that both underlies and undermines digital media’s archival promise.”¹⁰⁶ The Cloud will not save us. Memories are best kept close to the heart.

Writing in 2010, Joan Fontcuberta states that “in our age each moment would seem to be lived for the sole purpose of its instantaneous transformation into an archived, shared image.”¹⁰⁷ I do not believe these habits are formed purely by unchecked vanity. Rather, they evidence the *archival impulse* of the avatar that is shaped by the network’s topology: “the creed in absolute usability” and view of the self as an “always perfectible machine” advocated by the neoliberal faith.¹⁰⁸ We can also look at Fontcuberta’s observations as a simultaneous reinforcement of and a challenge to asymmetries of *vectoral formations*, which I soon address, for these actions also perform the function of play: the avatar un/plays the expectations of an omniscient Internet through experiments in identity, performance, and the archive of the self. With the following models of ruination, particularly *The Deprecated Platform*, I demonstrate how these experiments in archiving are users just trying to preserve a piece of themselves in a world that moves too fast.

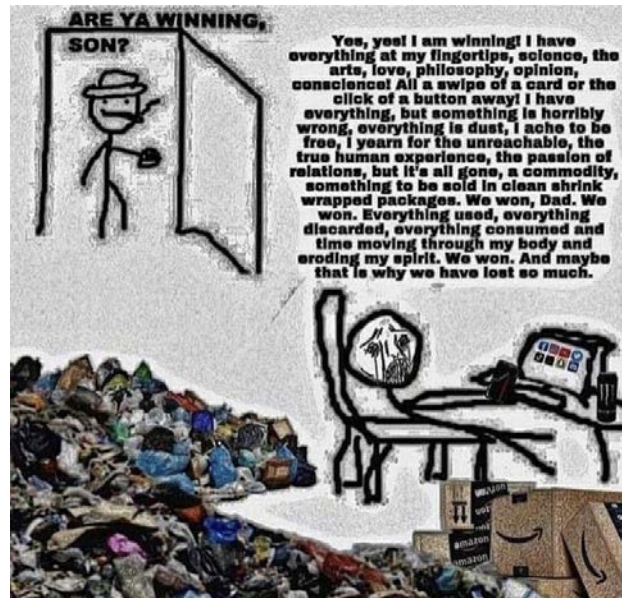
¹⁰⁶ Chun, “The Enduring,” 148.

¹⁰⁷ Lopez-Gay, *True Fictions*, 54.

¹⁰⁸ Righi, *The Other*, 34.



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While I do not have a direct parallel to Stoler's "imperial formations" in my analysis of digital ruins, I have something close: "vectoral formations." This term deploys McKenzie Wark's theory of the ruling vectoralist class, whose power rests not in owning or controlling the means of production but "in control of the logistics by which they are managed,"¹¹¹ to describe the dominant powers with an obvious stake in the machinations of digital ruination, like Alphabet or Amazon. You could even say they own the "Weapons of Math Destruction", as Cathy O'Neil might argue, "the ill-conceived mathematical models [that] micromanage the economy, from advertising to prisons," to social media feeds. Platforms do not rely on the avatar's curiosity, or

¹⁰⁹ Meme in Are Ya Winning, Son? Format, image, Instagram, April 22, 2023, accessed May 1, 2023, <https://www.instagram.com/p/CrXAdMjpju9/>.

¹¹⁰ Meme in Are Ya Winning, Son? Format, image, Imgur, April 26, 2023, accessed May 1, 2023, <https://imgur.com/gallery/NbGsu8A>.

¹¹¹ Wark, "Considerations on a Hacker."

its propensity to explore and experiment, but on that which can be measured: attention. The personalized social media feed is but one invention of networked technologies that reduces the avatar to a divisible, calculable object. From the machine's view, we are data for statistical projections. Once WMDs get running, they are dangerous, self-perpetuating configurations which "create their own reality and justify their own results," often to the detriment of the masses.¹¹² Vectoral formations guide innovation, obsolescence, and moralistic model-making by means of religious adherence to Moore's law, routine capture of data on platforms, and enforcement of *neoliberal networked time*. All of this is backed by the condemnation of idleness which compels us to engage in "continuous interaction, contribution, and involvement".¹¹³ Vladan Joler describes these developments in networked technology as a "new form of extractivism... [in which] thousands of corporate and government actors compete to win the territories of our behavioral, emotional and cognitive landscapes. Once the territory is invaded, the process of enclosure and exploitation is established."¹¹⁴ The computational power of vectoralists like Apple, Meta, or Microsoft has the ability to problematize concepts of user agency by aligning creative labor with a market-driven logic. The division between work and play melts into a single notion that is nebulous and concrete, material and immaterial: content. The data body is the fascist twin of the avatar.¹¹⁵ But user agency is not totally compromised, given that avatars are uniquely positioned to critically un/play these games of algorithmic domination (see *Cycles of Dust and Debris*).

¹¹² O'Neil, *Weapons of Math*.

¹¹³ Righi, *The Other*.

¹¹⁴ New Extractivism.

¹¹⁵ Ibid.

Stoler points out that “Walcott’s language is poetic, but what he looks to is not.”¹¹⁶ He wants us to expand our field of vision to grasp the decay just out of view, that which is intimate but obscured by the narrow definition of the historical, that which pulls us away from the denser, more populated nodes of the network and towards the withering nodes and its withering branches, or what possibilities these gnarled limbs once pointed to. Renaming certain developments in the Internet’s infrastructure as digital ruination suggests a broader range of starting points to engage in this discourse. Sometimes we must dislocate a history from its localized context so as to reveal its role in shaping ruins outside of conventional historical interest or preservation and identify “places that are not honored as ruins.”¹¹⁷ Stoler goes on to say that this focus on imperial formations, or vectoral formations in the case of digital ruins, might help us see “ruins as epicenters of renewed claims, as history in a spirited voice, as sites that animate new possibilities, bids for entitlement, and unexpected political projects.”¹¹⁸ In each of the following models, I use encounters with and affective responses to digital ruins as evidence of this process. By investigating how users collectively negotiate digital ruination, we can better understand its processes and our possibilities for intervention, or how we can inspire new “political projects” for grappling with vectoral formations.

Then, we must ask, what is rot? What does it corrode, where does it take hold, and how does it persist? Going forward, keep this question in mind: how do differing models of digital ruins propose distinct ways of engaging with ruins that are playful, regenerative, and sensitive to




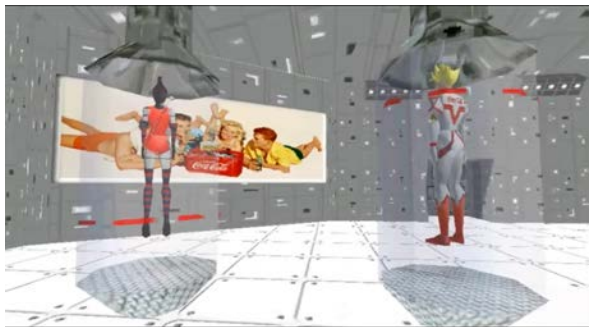
¹¹⁶ Stoler, “Imperial Debris,” 200.

¹¹⁷ Ibid., 198.

¹¹⁸ Ibid.

the failings of the vectoral class? But keep an open mind as to what other unrealized futures haunt these ruins, and you might find yourself dancing with un/familiar ghosts.

Sites/Sights of Ruination

	
<p>Screenshot of <u>recorded gameplay</u> from the Worlds.com server, Britney World.¹¹⁹</p>	<p>Screenshot of <u>recorded gameplay</u> from a Worlds.com server depicting a cityscape.¹²⁰</p>
	
<p>Screenshot of <u>recorded gameplay</u> from a Worlds.com server depicting a church.¹²¹</p>	<p>Screenshot of <u>recorded gameplay</u> from the Worlds.com server, Coke World.¹²²</p>

Videos of recent wanderings in Worlds.com, an abandoned MMO from 1995.

¹¹⁹ "Britney world," video, 00:48, YouTube, posted by Wavi, November 28, 2013, accessed April 8, 2023, <https://www.youtube.com/watch?v=o5Ptow1IbC0>.

¹²⁰ "walking in worlds.com," video, 01:15, YouTube, posted by Booris, August 22, 2021, accessed May 1, 2023, <https://www.youtube.com/watch?v=psgsL13Mbec>.

¹²¹ "Worlds.com: Church," video, 02:15, YouTube, posted by Kiur 1999, July 7, 2018, accessed April 8, 2023, <https://youtu.be/QSE-BACA7yk>.

¹²² "Worlds.com: CokeWorld," video, 7:17, YouTube, posted by Kiur 1999, July 21, 2018, accessed April 8, 2023, <https://youtu.be/FQNakA8xntE>.

Walking through the abandoned *Worlds.com* servers today feels like walking through ruins of a lost civilization, or a post-apocalyptic landscape. While NPCs (non-player characters) watch, you can leisurely stroll around, teleport between worlds, take a seat in an outdoor cafe and appreciate the architecture that surrounds you. But the server has a higher chance of crashing than you have a chance of encountering another user. The “worlds” made in collaboration with brands, such as Britney World, are in significantly better shape than the worlds made for more personal gatherings of people. Though a small community of players stuck around to tirelessly archive the hundreds of user-created worlds, many have not survived over the years due to missing files for ephemera such as soundtracks, floor tiles, or sky textures.

Sights/sites of Ruination situate digital ruination within a wider critique of digital prosumerism. The crafted interfaces of abandoned virtual worlds retain traces of agency which are detectable through the intentionality and unique personality of the space. Built to be public forums like churches or town squares, intimate settings like family homes¹²³ and graveyards,¹²⁴ surreal dreamscapes like the afterlife or BDSM dungeon,¹²⁵ or hyper-capitalist spaces like Bowie World,¹²⁶ these artistic creations are haunted by the dreams of their makers. Because they are “always on”—not yet banished to the realm of obsolescence—ruination is signified by the absence of avatars. This absent presence, which is both seen and felt throughout the networked

¹²³ See Edward Castronova’s 2001 paper, *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier*.

¹²⁴ See Margaret Gibson’s 2018 book, *Living and Dying in a Virtual World: Digital Kinships, Nostalgia, and Mourning in Second Life*.

¹²⁵ I am not telling you to search “Second Life BDSM Dungeon Server” on YouTube.

¹²⁶ “WORLDS.COM EXPLORATION | BOWIE WORLD: THE HAND GARDEN,” video, 02:56, YouTube, posted by It's Jidd, January 2, 2020, accessed April 8, 2023, https://www.youtube.com/watch?v=l0tP_44RyqA.

space, is usually the result of a mass migration: players have not given up, but moved on. I argue that the ongoing disruption of the circuitous link between player and machine is a key factor in sustaining this model of digital ruin. This section builds on research from Vincent Miller and Gonzalo Garcia, focusing on their observations of an “eternal present”, the existential experience of digital ruins, and the “utopian rhetoric” which animated these worlds —and, importantly, challenging their arguments relating to im/materiality and temporality.

Do the gears still turn?

The spatial affordance of three-directional movement defines sights/sites of ruination as something distinct from the other models, as they are navigable in an intuitive and uninterrupted way. The ruin can still be used, more or less functional, if not for some missing textures or laggy load time. Less a matter of interactive affordances and more a matter of visual expectation, the decayed feedback loop between virtual world and avatar is rendered a spectacle. Examples of abandoned MMOs include *Worlds.com*, *Blue Mars* and *ActiveWorlds*. I consider inactive servers in otherwise highly populated games in this category as well as do most other Internet users who form the “lost media”, “abandonware”, or “dead games” fandoms. The abandoned worlds I list above emerged during a “speculative boom of virtual ‘real estate’”,¹²⁷ from the mid-1990s to early 2010s, when MMOs dominated the social gaming scene. Garcia and Miller point out that such games “promised a digital economy of abundance” based on “limitless speculation, creativity, reproduction, prosumption, relationship building and self-realisation, unhindered by material limits.”¹²⁸ *Worlds.com*, *Blue Mars* and *ActiveWorlds* are some of the few that still exist,

¹²⁷ Miller and Garcia, "Digital Ruins," 436.

¹²⁸ Ibid.

fully functioning despite a near-extinct user base.¹²⁹ Like post/industrial ruins, this model of digital ruin is haunted by myths of capitalist prosperity.

Garcia and Miller assert that “the creative destruction of the material is mirrored in the creative abandonment of the digital.”¹³⁰ While this observation is true in spirit, it does not account for the covalent bond between im/materiality in networked space. Our spliced world does not operate on the premise of mutual exclusivity between these two processes. Because abandoned virtual worlds maintain form and style, but lack people, Miller and Garcia argue they “project a mournful nostalgia not of what was... but what can never be... [and] they have only come to fruition as empty, hollowed out spaces that will eventually, and inevitably, cease to exist.”¹³¹ It is precisely this inevitable demise — when servers are unplugged and user data is scrapped—that co-constitutes the materiality of this world with that of the avatar. Unlike other models of digital ruin, which possess regenerative potential at the level of circulation (such as in the form of memes), the regenerative potential of the abandoned virtual world lies in the usability of its *present* form: now, they can be explored as gallery venues instead of public parks. If the gears continue to turn, why not view its ruined state as a chance at an afterlife? Miller and Garcia speak about the ruins of *Blue Mars* as an *abstraction* of the past—a dead thing from a dead past—when it is actually accessible *now*, still interactable and still very real. Perhaps undead. As Kate Wagner says, “the Internet feeds on its own dying dreams.”¹³² Put this way, the *Site/sight of*

¹²⁹ Thriving MMOs of today include IMVU, Second Life, and Entropia Universe, all of which have been overtaken by adult content like gambling rings and cybersex markets.

¹³⁰ Miller and Garcia, “Digital Ruins,” 451.

¹³¹ Ibid.

¹³² Wagner, “404 Page.”

Ruination actually cannibalizes its “authentic” self by occupying the place of the original and becoming something different.

As the purported pastness of the virtual world disintegrates, what do we make of its afterlife? First, we see an obvious comparison of *sites/sights of digital ruination* to the classical ruin, and notice intriguing dis/similarities. The digitally-rendered world resembles the picturesque ancient ruins you might find in paintings and poetry. Its “hollowed out” quality mediates the picturesque decay and renders time a fluid state, together conjuring a “Lefebvrian opportunity” to experience the space differently than previously possible. We must be careful when we use words like “before” and “after”, because the process of ruination is protracted and ongoing: the fluidity of time in this space does not constitute an “eternal present” as Miller and Garcia argue, but a *fluctuating* present. They contend that the “narrative remains untouched”, but the fluctuating present demands that the narrative is being continuously re/written. These two claims often contextualize ancient ruins, and yet as anyone with a mind for history knows: ruins like this are imperial myth-making at its finest, or quickly fetishized to represent the capitalist notion of linear progress. The dual processes of spacing and timing emerge through the circuitry of the avatar, so the avatar’s unstable presence in the ruin disrupts these processes and sets them on different trajectories, which ultimately produce different stories— a world in fragments.

“Exploring Dead Games”¹³³

Without falling into the aesthetic traps set by ruin lovers of old, I wonder how the quality of “pristine abandonment” can help us understand the afterlife of *Sites/sights of Ruination*. In a sense, the pleasure of this form is derived from the personal experience that was previously

¹³³ Title borrowed from this youtube compilation: <https://youtu.be/TNDfvNqPILg>

unattainable in an overcrowded setting. Writing of modern ruins which have “not yet found the patina of age”, Macaulay says that ““ruin pleasure must be at one remove, softened by art.””¹³⁴ Through memetic interventions, amateur archival practices, and indulging in nostalgia, Internet users have found ways to embrace the afterlife of the abandoned virtual world. Mostly in the form of YouTube content, the titles of these videos typically include words like “exploration” or “investigation”, “abandoned” or “dead”.¹³⁵ This genre is not exclusive to *Worlds.com*, and extends to include any depopulated game environment. *Worlds.com* is a classic text in this canon, having entered a state of infamy after YouTube personality Nexpo pursued his own investigation in a 2019 video titled, “Cult in a Dead MMO”.¹³⁶ Wandering from server to server, this type of video usually documents the many user-generated worlds in all their hollowed-out glory. Abandoned virtual world exists at the bleeding edge of memory. Such content creators, as well as their audiences, derive pleasure from this confrontation with ruin. They play with the virtual world in its present form, producing a body of work which allows us to observe the artistry and deliberacy of the space, as opposed to the kinds of people we might have once run into. As the avatar wanders the empty worlds, we are able to pay attention to the details like texture, lighting, or sound, and appreciate the virtual world as a craft.

In Miller and Garcia’s autoethnography which follows the same rules – explore and report—they say that “meaning is cut off” by a lack of “push-pull events” because “we are left with the task of trying to make sense of these spaces without any objectives”.¹³⁷ The

¹³⁴ Macaulay, *Pleasure of Ruins*.

¹³⁵ Wavi, "◆ worlds.com ◆," YouTube, accessed April 8, 2023, <https://www.youtube.com/playlist?list=PLcfmZOnBp7Zh6KKxoILlogZb55JIxcwSz>.

¹³⁶ "Cult in a Dead MMO," video, 34:15, YouTube, posted by Nexpo, December 26, 2019, accessed April 8, 2023, https://youtu.be/p9LWzr-_ibI.

¹³⁷ Miller and Garcia, "Digital Ruins," 444.

autoethnographic genre of Nostalgia porn YouTube content, with its insistence that “the good old days” are fading into memory, that inc suggests otherwise. While this archive of YouTube content may forsake *liveness*, it does so by accepting the beauty of the ruins and not condemning them. At first glance, tThey seem to argue that the gameplay has been *reduced* to wandering. But these digital landscapes are decorated with exposed nerves. The site of ruination is a *sight*. That is, the empty virtual world becomes something like a gallery of user-generated art. Instead of fading into the background of nonstop social interaction and quirked-up avatars, the architectural creations focus our gaze, transforming a pile of digital rubble “back into an edifice full of meaning.”¹³⁸ Using this is a basis for comparing digital ruins to the industrial ruins imagined by DeSilvey and Edensor, both actually “contain the possibility for alternative conceptualisations and uses of space.”¹³⁹ Although I cannot say much about the archiving process that has been undertaken by the small group of dedicated *Worlds.com* players, who save old worlds from disappearing and document how to make avatar skins and build new worlds, I can confidently say that their efforts are both admirable and effective. Without them, the resurgence of YouTube content from the mid-to-late 2010s of *Worlds.com* gameplay would not have been possible. While this archive may forsake *liveness*, it does so by accepting the beauty of the ruins and not condemning them. And, one day, if Worlds, Inc. finally loses one last lawsuit, and its servers are gone for good, we can thank the archival impulses of Internet users for our ability to still view *Worlds.com* as it once was. While this archive may forsake *liveness*, it does so by accepting the beauty of the ruins and not condemning them.

¹³⁸ Boaden, "Peculiar Pleasure," 156.

¹³⁹ Miller and Garcia, "Digital Ruins," 439.

Thanks to the vast documentation of *Sites/sights of Ruination*, we are situated in a privileged position to wonder. Though we are amazed by the expressive potential for avatarship, the talent of the virtual world's craftsmen, and the obvious influence the game has had on all that follows, we cannot deny the shame. The ad-hoc archivist goes uncompensated and underappreciated. Their labor of love is commodified by the YouTube gamer with an audience who craves nostalgia. The fiscal and material considerations of the *site of ruination* further complicate our sense of wonder. We know that *Blue Mars* runs on *Immersive Worlds*' servers and is overseen by Ball State University. However, the lifeline of Worlds.com and ActiveWorlds is a matter of speculation, even for the Reddit historians. In the case of Worlds.com, its owner is a suspected patent troll, able to sustain the server costs for the game thanks to numerous and unending lawsuits. In the past two decades, Worlds, Inc. has pursued legal action over the infringement of the "U.S. patent 6219045 for multi-server technology for 3D applications", which is the basis for most 3-D MMOs.¹⁴⁰ The running list of companies includes Activision, Linden Labs and Microsoft, over titles such as Minecraft, Second Life, Guild Wars, and World of Warcraft. The reason I bring attention to their underlying operations—server costs, upper management, intellectual property control—is to say that calling these worlds immaterial assumes a false dichotomy. I have already problematized this dichotomy at length, so what I would like to assess here is the spell that gets broken. Miller and Garcia claim that "we no longer strive to create utopias on the Internet."¹⁴¹ Perhaps this is true. Perhaps this false dichotomy was the raw material for fantasy, and perhaps our spliced world betrays the promise of transcendence.

¹⁴⁰Dave Leahy et al., Scalable Virtual World Chat Client-server System, US Patent US6219045B1, filed Nov. 1996, and issued Apr. 17, 2001, accessed April 8, 2023, <https://patents.google.com/patent/US6219045B1/en>.

¹⁴¹ Miller and Garcia, "Digital Ruins," 439.

But, as memetic content shows—be it YouTube videos or static images—the possibilities of play are not limited to the confines of techno-utopian ambition.



Another future previously imagined is that of the avatar as an engine for creative experiments of the self and the home. While the avatar remains a site of experimentation in many video games today, it is largely relegated to technologies which self-identify as games. For the pervasive and gamified platforms of social interaction like Instagram or Facebook, which arguably descend from social games like *Worlds.com*, the avatar is encouraged to emphasize a consistent, branded self. As Miller and Garcia point out, in virtual worlds with no plot, no leveling up, no need for agility or combat mechanics, “avatars were not meant to run and leap around these places, but talk, dance, explore, shop and build.”¹⁴³ To their credit, Miller and Garcia gesture at the materiality of the avatar when they mention the *interface envelope*¹⁴⁴ in their introduction. However, they fail to consider a critical perspective. Empowered by the tools

¹⁴² Lisa Simpson Presentation Format with the Text "Lamps in Games Are Using Real Electricity."

¹⁴³ Miller and Garcia, "Digital Ruins," 439.

¹⁴⁴ A term coined by James Ash to describe the layer of digital technology that mediates our interactions with and perceptions of the world.

for customizing both the avatar and the virtual world, the fluidity of the digital self renders avatarship as a complex site of multiple identities, suggesting the penetrable, porous, and malleable subjectivity of the posthuman. According to Katherine Hayles, “in the posthuman, there are no essential differences between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals.”¹⁴⁵ Avatarship anchors the user in actual space by augmenting actual bodies through digital play: you perceive and conjure presence because “your actual and virtual bodies interact with [virtual objects and space] as aspects of a holistic embodiment across worlds.”¹⁴⁶ The player makes the world just as the world makes the player. Tools for personalizing avatars remake our relationship to them by allowing for radical alterations, improvements, mutilations, and discontinuities. Social media platforms as social gaming sites might incorporate play at the level of form, but for the avatar and experimenting with identity, it is like neoliberal hell. The figure of the social media influencer showcases the drive for self-perfection and *consistent* identity taken to the extreme, exemplifying the neoliberal compulsion to optimize yourself by appearing marketable and curating a personal brand. As YouTube nostalgia clickbait shows, avatars as multipliers for the self is a norm being gradually eroded with the ongoing fragmentation of the Internet.

Furthermore, the standard user interface of these social media platforms provide minimal affordances for building a virtual home. Every user must fill in the required fields to make their profile: email address, name, username, profile picture, bio. The 3D virtual world affords the ability to play with space, not just identity, through coding, curating, and sculpting digital matter. Making a virtual space unique, or unique at the level of form and not just content, is a romantic

¹⁴⁵ Hayles, *How We Became Posthuman*.

¹⁴⁶ Ibid.

use of server space which games like social media have deemed frivolous—we now pay for a streamlined experience, not a fantastical one. The kind of prosumership depicted by MMOs during this time was largely untainted by the sneaky habits of surveillance, ceaseless microtransactions, or in-game economies.¹⁴⁷ Commodifying the avatar was not clearly construed as a means or an end for the gamemakers, and when financial concerns would bear weight on avatarship, they did not hinder the possibilities of play. However, without the avatar to animate the world through a distribution of agency, any financial feasibility that once existed—through brand deals or otherwise—had to be renounced.

Here, we feel a jolt of shame: what utopic vision was really being serviced by the virtual world if it still relied on capital to function? Every model of digital ruination is in some way beholden to the interests of capital, which helps form the very basis of the model's undoing. Characterized by the ability to produce, consume, and circulate content (sometimes all three simultaneously), prosumership is the core business model of networked technology. Users' emotional attachment and the financial benefits of game companies intertwine. Prosumers, which I represent with the avatar, are the binding glue in this equation. The cause and consequence of *Sites/sights of Digital Ruination* is the dis/connected network, the infrastructure of which the vectoral class only has interest in maintaining insofar as it is profitable. Ruination in the information age is entangled in the process of capital accumulation, and must be treated as such. Understanding ruination as a process, in this context, allows us to reframe archival practices not as top-down efforts with specific narratives in mind, but a community-driven response to neglect inflicted by the vectoral class.

¹⁴⁷ Games such as *Second Life*, on the other hand, did develop in-game economies focused on creating businesses which sold developed land, consumer goods, or avatar skins.

Before moving onto the next model, *Cycles of Dust and Debris*, I would like to take note of another layer comprising *Sites/sights of Ruination*: the myth. I gesture toward the existence of urban legends in the networked world when I mentioned the popular legend of *Worlds.com*'s death cult. The lore invented to tell stories about digital ruins is just like stories we share about the haunted lake a few miles east, or the mysterious cemetery with unmarked gravestones. What else can we learn about digital ruins by treating these mythmaking practices as worldbuilding tools, literary texts, or indicators of a ruin's re/generative potential? Hopefully, this question inspires a sense of revelation: even when we think we're transcending our mortality through fancy technology and pixelated bodies, we always propagate ourselves best through stories.

Cycles of Dust and Debris

Fast fashion brands to garment workers being paid less than \$1 a day: so we want these feminist tshirts by the end of the day
Garment workers:



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How fast is too fast?

The acceleration of reality marks our bodies and environments. The rise of the “fast fashion” industry piggybacked on the shortening of trend cycles to promote a culture of disposable fashion. It hides the violence of the clothing supply chain with its promise to help you *express* yourself, its extensive catalog, affordable prices, and offshoring of labor abuses and health risks. The result of poorly regulated waste disposal, workplace safety, and depletion of natural resources in neo-colonial arrangements of global production.¹⁴⁹ We might imagine this as Paul Virilio’s claim made real: “Nothing is ever obtained without a loss of something else.”¹⁵⁰ Two-day shipping delivery on every Amazon Prime order might accommodate the needs of busy individuals and institutions who can’t afford to wait. Time is money, productivity is the dream.

¹⁴⁸ Slowfashionmemes, Fast Fashion Brands vs Garment Workers Meme, image, Instagram, March 10, 2020, accessed May 1, 2023, https://www.instagram.com/p/B9kJiu_nJMV/.

¹⁴⁹ For more on this, read Julia Hildebrand or Dougald Hine.

¹⁵⁰ Virilio, “Speed and Information.”

Those landfills of Amazon merchandise won't fill themselves! The 24-hour news cycle combines news and entertainment to bring us the latest in tragedy, absurdity, and trivial matters, stifling journalistic integrity and spitting out spectacle instead. Could the average American point to Ukraine on a map before 2022? Or even in 2023? But even traditional broadcasting companies can't compete with on-demand streaming platforms, the owners of which have morphed from distributors to producers to a frightening combination of both. They regiment our media diet, and they know we love to binge.

As the Internet grew, and became increasingly commodified, broadcasting was not the shiny new tool it once was. With every Internet user rendered an author, artist, politician and skeptic, we identify the "dictatorship of speed" in how we access information, and how information is *made* accessible. Shifting from mass to personalized media, digital technologies utilize narrowcasting and pointcasting—two different but inseparable systems which dominate the networked ecosystem. Narrowcasting organizes audiences around certain consumer identities, contributing to the pleasure of consumption, while pointcasting exploits avatarship by curating the readily available stream of content to create particular affects and moods. Together, these cultural phenomena mold consumption habits into matters of identity, belonging, and belief, whereby "real" change only occurs on the basis of the individual. Confronted with endless choice and two-click purchasing power, the Internet user is thrown into a daze. Expanding highways doesn't solve traffic, after all. It makes congestion worse.¹⁵¹

All these examples operate as both cause and consequence. They point to increasing speed of production, consumption, and circulation—vectors of unaccountability in a world of

¹⁵¹ Mogridge, "The Self-Defeating."

neoliberal globalization. Late capitalism has witnessed scholars from nearly every discipline—political science, psychoanalysis, anthropology— discuss the acceleration of time alongside the acceleration of capital. Reading Jean Laplanche, Len Manovich, and Robert Hassan together, I argue the current machinations of desire, identity, and digital media are all directed by the logic of acceleration, innovation, and globalization. The wristwatch was perhaps one of modernity's first cyborgian inventions. These logics converge to form a subject that is fragmented, disoriented, and unable to realize stable identity formation in a rapidly changing world. Thus, “the rate at which individuals assume and shed identities”¹⁵² increases to reconcile this confusion, with the Internet as the tool for manufacturing more flexible, profitable, and depoliticized identities. Even under algorithmic governance (fed through the pointcasted tube that is the endless scroll), the neoliberal subject does not passively submit to this order of things. *Cycles of Dust and Debris* explores the subversive potential of the avatar to resist this domination through meme-making, a form of critical play which produces unique appetites for media consumption. “Neoliberal network time”, Robert Hassan's term which denotes the global logic of computer network driven speeds, provides the basis for digital ruins which I describe as *dust and debris*. It also serves as a polyvalent signifier for the many senses of time that digital media produces, and that users play through.

Virilio points out that the succession of accidents which followed the industrial age must have its successor “on the information (super)highway...the point [of which] is not about the information in itself...[but] absolute velocity of electronic data.”¹⁵³ This velocity is one of the many forces of ruination. I argue that Internet memes constitute the “never-seen-before accident”

¹⁵² Peretti, “Capitalism and Schizophrenia.”

¹⁵³ Virilio, “Speed and Information.”

anticipated by Virilio, accidents which cause decimation and regeneration in a series of cascading collisions. Less like contagions,¹⁵⁴ memes are more like the perfect storm. But who doesn't love dancing in the rain? Media archaeologist Wendy Chun eloquently challenges Virilio's "dictatorship of speed," a notion which "can blind us to the ways in which images do not simply assault us at the speed of light." What happens when memes reach ubiquity? When repetition, re/envisaging, and re/appropriating guide the assault of images? She theorizes the "enduring ephemeral" to recognize the agency of media, to signify the "battle of diligence between the passing and the repetitive" which characterizes digital media.¹⁵⁵ And so, I focus less on the "inert remains" of digital ruin but rather their "vital refiguration,"¹⁵⁶ as undead media breaks down the walls barricading platforms and produces a networked landscape in their image. Going forward, we look at the enduring quality of digital ephemera, specifically memes, by assessing the myriad lives they can live, die, or be reborn.

Rubble as Ruin, Ruin as Rubble

Before we dare to ask *what is a meme?* I would like to explain my framework for *Cycles of Dust and Debris* as a process of digital ruination. Viewing ruins as rubble, I borrow from Gastón Gordillo's anthropological work on imperial ruins in the Argentine Andes in which he argues for a view of ruins as raw, chaotic material that can be mobilized to create new forms and meanings. Speaking with the cowboys who neighbor these ruins, Gordillo learns how ruins are a

¹⁵⁴ See Richard Dawkins's *The Selfish Gene*.

¹⁵⁵ Chun, "The Enduring," 167.


¹⁵⁶ Stoler, "Imperial Debris," 194.

dynamic, active form that can be re/sourced for creative practices or political purposes. Formed by the “modernist and class-based dispositions”¹⁵⁷ of their authors, conventional theories of ruin try to remove the rubble from the ruin at a discursive level. Gordillo disrupts the conventional ruin ideology by raising rubble to the same status as the monumental ruin, problematizing the notion of rubble as something formless or unworthy of aesthetic or cultural appreciation.

Paraphrasing Helmet Puff, he writes that “these attempts to draw a line between ruins and rubble seek to create a hierarchy of debris, in which rubble is looked down upon as a lesser, inferior type of matter, as ‘material without significance’ that is ‘destined to be removed.’”¹⁵⁸ Pulling from these ideas, I argue that the *dust and debris* which litter the Internet, in the form of last year’s fashion trends, recorded live streams, or clickbait banner ads that go unclicked, are the raw material for memes. At the peak of their popularity and after we all stopped laughing, memes themselves, too, are like rubble. They are often dismissed as art due to their ugly and unpolished form. Or too niche and absurd to impact political beliefs. Or too cringe and cultish to be funny. But rubble is a kind of ruin with or without a scholar to call it as such, and memes are sentimental, ideological, and imaginative with or without our acknowledgement. I propose that memes evince the re/generative capacity of digital ruins in their potential to be re/made, re/purposed, and resurrected.

¹⁵⁷ Gordillo, *Rubble: The Afterlife*, 10.

¹⁵⁸ Ibid.

Memes are those funny pictures right?	
Memes reflect the state of society	
Memes are a reflection of the creator's subconscious	
Memes are a reflection of the collective human subconscious	
Memes are a mental virus	
Realizing memes are a living entity that exist within and between human collective consciousness and memetic data transmission over social media. Swaying global politics and brings as many eyes upon itself to spread as far and wide as possible, guiding events towards an optimal future path it has predicted for itself and even this meme is part of the process.	

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What is Critical Meme-making?

An Internet meme is content: the molten sludge that bridges the divide between labor and leisure and challenges you to search for its meaning. It can be a screenshot of a famous tweet, a YouTube apology video, a news article ripped to shreds by conspiracy theorists, a celebrity, a band, even an entire election. An Internet meme is its form: it is the context, the template, the image itself, the subject or maker of the image. It is the text which captions it, the font of the caption, the placement of the caption, the crossed-out caption. It is the sound which accompanies it, or the original source of that sound. Or, the meme is the artifact that results from a combination of these interdependent forces. Like a pile of rubble beneath a crumbling stone wall, memes build on each other. They are always in conversation with one another, heightening levels

¹⁵⁹ Ohmattic, "Self Actualizing Meme Magic," steemit, last modified March 20, 2018, accessed May 1, 2023, <https://steemit.com/meme/@ohmattic/self-actualizing-meme-magic>.

of complexity through multiple layers of references. To read a meme, you must read underneath, inside, and through. According to Limor Shifman, memes are collectively produced, mutant media with the propensity to circulate.¹⁶⁰ I add that this production and distribution model reflects vectoral formations in terms of how it happens, and who can benefit from the free, affective labor of creating content on platforms, or even ascertain “the value of that information in the aggregate.”¹⁶¹

Sourced from the *dust and debris* of the networked world, they allow users to un/play, re/skin, and re/write the rubble. I borrow these terms from Mary Flanagan’s critique of domestic games played by young girls in the Victorian era. Dolls are pedagogical tools for learning subversion. Players would enact taboo or secret scenes like murder or an affair (unplaying), alter the presentation of their dolls so that they are appropriately dressed for such unconventional occasions (reskinning), and redefine play by means of fictional literature (rewriting).¹⁶² The digitally-mediated player we know as the avatar employs these same techniques in meme-making practices. Writing in 2001, Len Manovich claims that “what was referred in post-modern times as quoting, appropriation, and pastiche no longer needs any special name. Now this is simply the basic logic of cultural production.”¹⁶³ We make meaning in meme-making, and utilize techniques for critical play towards comedic, ideological, and aesthetic ends. As “ideological machines,”¹⁶⁴ memes can solidify community, radicalize belief, or facilitate mythmaking. But we should not think of memes as once pure form degraded by

¹⁶⁰ Shifman, *Memes in Digital Culture*.

¹⁶¹ Wark and Wark, "Circulation and Its Discontents."

¹⁶² Flanagan, *Critical Play*.

¹⁶³ Manovich, "Generation Flash," Manovich.

¹⁶⁴ Lovink, "Overcoming Internet."

network effects, or an essential thing to be infinitely copied. I propose that the meaning in mimesis is produced in the edit, the exchange, the recontextualization. They are all artistic choices that configure a multilayered and multi-authored performance. To *meme*, then, is to pull a person, event, image, or other piece of culture into this fold and play with it in some way.

Exploring rubble as “textured, affectively charged matter”¹⁶⁵ prompts us to wonder, what do memes make real? Turning back to Gordillo for a moment, he explains that the hypothetical ruin represents the deliberate attempt “to conjure away the void of rubble and the resulting vertigo that it generates.”¹⁶⁶ Memes are also tools for crafting collective identities as we seek to resolve our splintered subjectivities and recover from a dizzied state of disorientation. They conjure subversive arrangements of people and taste through re/producing aesthetic sensibilities, ironic detachments, and an anti-corporate ethos. Memetic content also allows us to read the audience: could this be more than mutually assured destruction? We confront ruins by playing with and through them: memes are musings on accelerated time. Two horses are running on the track, neck-in-neck. Memes are the only cultural ephemera capable of keeping up with *neoliberal networked time*. The infrastructure of the Internet appoints the meme as a multiplier, control switch, and storyteller—a masterful design of desire. Memes are the antithesis of agency; they ecstatically surrender control. Users negotiate fluctuating dynamics of their own networked subjectivity through memes.

¹⁶⁵ Gordillo, *Rubble: The Afterlife*, 10.

¹⁶⁶ Ibid.



Screenshot from The Internet Historian's video, The Insta-grabbing of r/Dank memes, which details the history of meme-makers fearing, defying, and ultimately accepting platform collapse. The author highly recommends that the reader watch the video.¹⁶⁷

Unfortunately, I am writing at a time when memes as we once knew them (viral videos and funny cat photos) have disintegrated to dust. This fine powder has been dispersed across the network with gusts of hot air, sometimes cold air. Sometimes tornadoes. Over the 2010s, we have witnessed the process of platform convergence with moves like Twitter incorporating the video format, Instagram stealing Snapchat's story form, Snapchat allowing payment transactions like Venmo, or Facebook adopting live streams. But what I want us to consider is that, if not at the level of content's form, at the level of circulation we identify a mycelial infrastructure connecting these disparate networks. If you're a web crawler indexing data, platforms like social media sites or smartphone applications are hard to penetrate. For more accurate results based on your image search, for instance, you might search from Pinterest or DeviantArt instead. These enclosures contain their own algorithms for processing (recording, surveilling, monetizing), protecting (censorship model, content moderation practices), and portraying (the search, feed, advertising model) information. Memetic content, however, weaves through these intricate legal

¹⁶⁷ "The Instagrabbings of /r/dankmemes," video, 06:44, YouTube, posted by Internet Historian, March 22, 2019, accessed May 1, 2023, <https://youtu.be/9XN57BhyZwk>.

loopholes and community content guidelines, bypassing the garden wall and unifying the experience of being online. Even with an ostensibly fragmented Internet, memes are as ubiquitous as the Internet itself. Their model of circulation, which we will soon unpack, collapses distinctions between platforms. And we can't forget that memes first "crossed the screen"¹⁶⁸ a long time ago, making real the fictitious, absurd worlds they imagine. The virtual/real divide is actually just a meme.

You don't remember that?

Processes of digital ruination, endemic to capitalism in its networked form, prove our parents' fears wrong: the Internet *does* forget, as do we. The machine's imperfections are rarely accounted for in their popular narrative of rational action. For us and our networking tools, the fallibility of memory is exacerbated by the acceleration of culture. Applying Wendy Chun's concept of the "enduring ephemeral" to memetic content, we can understand the temporality of a meme as the "nonsimultaneity of the new" which denotes how "old things [are] continually relaunched as new, while new things [are] already old as soon as they [are] uploaded."¹⁶⁹ Like the undead, memes occupy the liminal space between what is new and what is already dead. This complicates technological determinism's read on history as a continuous march towards progress. Memes do not aim to slow the speed of neoliberal networked time, instead they play with the notion of speed and its dizzying effects: "new media, like the computer technology on which it relies, races simultaneously towards the future and the past."¹⁷⁰ In a present that is

¹⁶⁸ Steyerl, "Too Much."

¹⁶⁹ Chun, "The Enduring," 170.

¹⁷⁰ Ibid.

constantly fleeting, memes act as a means for remembering and re-envisioning: their dormant potentiality to be reincarnated evinces their status as rubble, saturated with re/generative power.

The ruin-rubble of memes imbues them with the dual power of remembering and forgetting. Vessels for dislocated memories, memes rewrite the typical narrative of ruination from pessimism to optimism and back to pessimism. We pessimistically assume that the worst will happen— that everything will disappear— and link this with the belief that good can come of it, that more pathways to different futures will unfold only when we are willing to let the dead mingle with the living. But this hopeful pessimism of sorts is followed by a fear, or certainty that the worst will happen again. And so this fear is replaced by an acceptance of the ruined landscape, inviting critical play and a perspective on remembering as a deliberate but nevertheless fugitive act.



Every now and then, a Twitter user will call upon other users to create a mega thread of deleted tweets. Mega threads like this are one of those beautiful things that happen when users of a platform can enact a sense of unity in their shared experience, to laugh in chorus. The shared experience in this example, is that of the software's failings. A glitch, if you will. Here, I would like to summon Legacy Russell in framing this glitch as an interruption that actually challenges the intended function of the system (effective content moderation) and reveals its fragility and incompleteness (this has been a flaw in the software for several years now). And, going forward, how memes embrace the flawed system, or that which yields digital ruin, and open up new possibilities for resistance.¹⁷¹ The most recent viral thread of deleted tweets happened in March of 2023—an opportunity that impulsive meme archivists like myself couldn't help but cash in on. Looking at this assortment of deleted tweets I saved from the thread, it is obvious I am not citing revolutionary uses of social media, but I believe they showcase the complex ethos of critical meme-making. For instance, the tweet of an article about the Astroworld stampede that clickbaited tragedy with Kylie Jenner's face demonstrates the anti-corporate sensibilities of meme-making, and how the *archival impulse* to screenshot was a gesture of accountability. You might find the thought of laughing at this meme to be absurd, but right underneath that is the absurdity of the People Magazine staff that reeks of desperation and lousy journalism. Just one speck of awkward or insensitive journalism in a whirlwind of clickbait forecasts a perfect storm. And from the eye of the storm, we can see how the ruin-rubble of memes is mobilized to create new forms and meanings.

¹⁷¹ Russell, *Glitch Feminism*.

Similarly, the screenshot of music journalist Eve Barlow's deleted tweet about “Free Parking” evokes a rush of defiance and the taste of victory: her zionist sentiment was meme-d into oblivion and the act of deletion was a signal of defeat. The screenshot represents Twitter’s solidarity with Palestine and the means for resisting zionist rhetoric of self-victimization through humor—a tactic especially critical given that calls to end Israel’s occupation of Palestine in American media are often shut down by conflating anti-zionism with antisemitism.¹⁷² In this way, memes provide an outlet for expressing anti-imperialist and anti-corporate sentiments that are condemned or otherwise censored in mainstream American discourse. “Free Parking” even became a symbol of resistance on the streets: in 2021 the Middle East Eye reported that the phrase was spotted on the protest signs of Palestinian liberation activists near Gaza.¹⁷³ Memes are like a podium that gives us those few extra inches of height so we can reach and tear down the giant banner that advertises a split between the online and offline worlds.

The entry for “This Tweet Has Been Deleted” on Knowyourmeme, a popular website that catalogs Internet phenomena,¹⁷⁴ purports that “the ‘This Tweet Has Been Deleted’ Rule is an internet rule and axiom—seeing the message ‘This tweet has been deleted’ at the bottom of a screenshotted tweet (which appears when a Twitter user deletes their post) makes the preceding tweet exponentially funnier.”¹⁷⁵ What they are missing in their analysis is that seeing the meme live, stumbling upon a deleted tweet in your feed *after* it could be wiped from Twitter’s servers, constitutes a glitch-as-meme. It exemplifies and embodies the *archival impulse* of the avatar that

¹⁷² From the river to the sea, Palestine will be free.

¹⁷³ Mansour, “Memes, Jokes,” Middle East Eye.

¹⁷⁴ Its entries mostly originate from the United States. There is a scarcity of non-English or non-American entries.

¹⁷⁵ “This Tweet,” Know Your Meme.

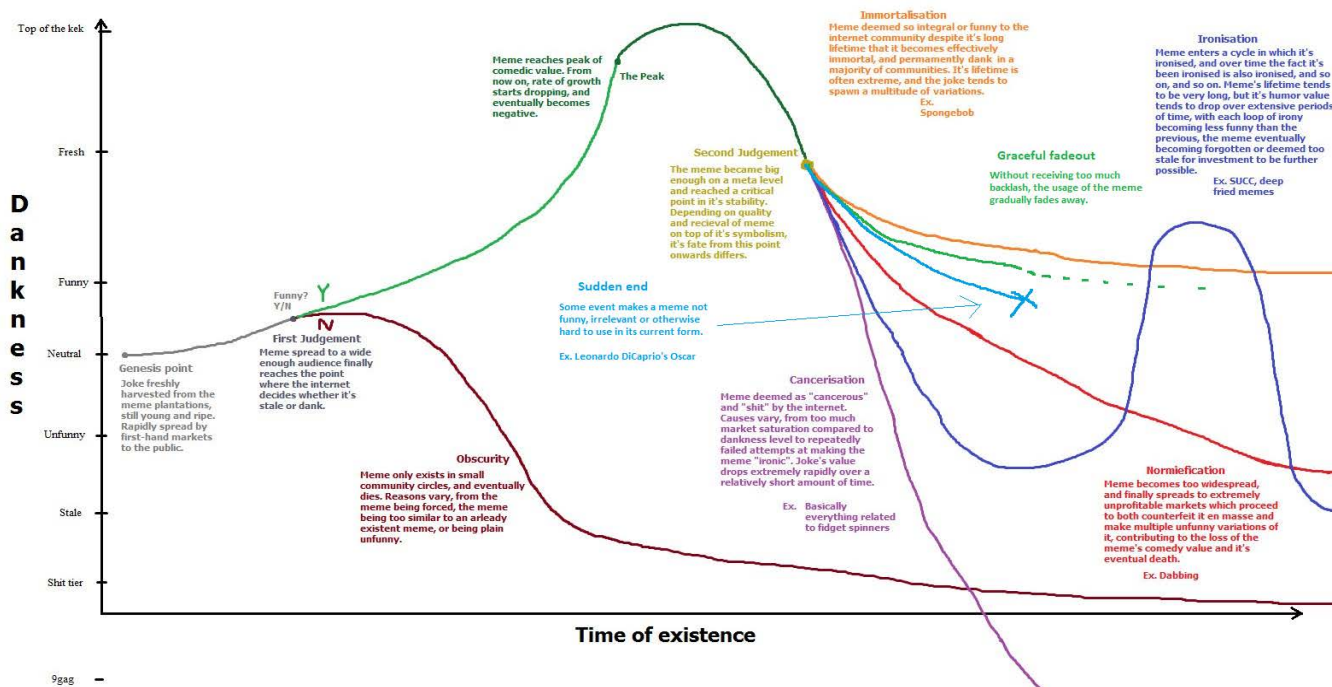
has been one step removed from real-time: despite being deleted, the tweet appears on the feed because the machine (web browser or mobile application) has cached the deleted tweet, so it lives inside of your personal feed and goes away for good once you refresh the page. Or, if you screenshot and share, it will live again. This flaw is problematic for many reasons, raising concerns for the privacy of users for one, but nonetheless exposes the friction in a supposedly frictionless environment. While information, art, and the like are mediated through algorithms which fight to control our attention, we still maintain a sense of agency through our assertion of humor and taste. Forced to face the Internet's rubble-ruin, the shock of disconnection unsheathes nerve endings and compels users to surmount their fear of ruin by playing with it.

The Memetic Life Cycle

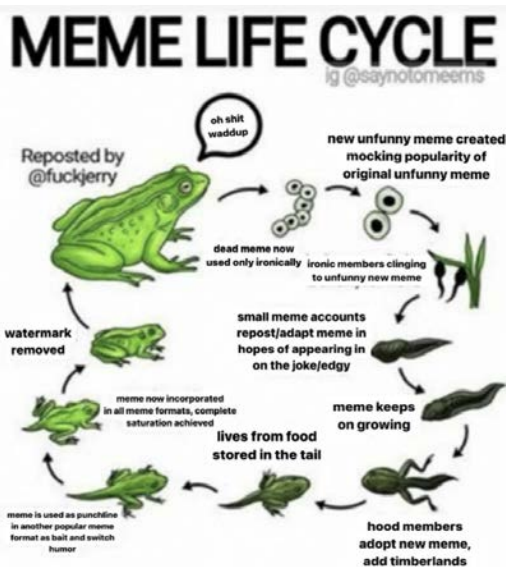
I will now use various user interpretations of the "Meme Life Cycle" as testaments to the re/generative capacity of the digital ruin. While my personal model faithfully follows the teaching, *memento homo... quia pulvis es et in pulverem reverteris* (remember, man, you are dust and unto dust you shall return), many Internet users have constructed their own formulas, timelines, and diagrams to work out their observations and feelings. As I compare and contrast their conceptualizations, I do not aim to prove a unified theory of meme death; rather, I hope to demonstrate that users engage in ongoing negotiations of digital ruination. Users are not passively consenting to the terms of acceleration, so we should not limit our curiosity to the content itself. As Wendy Chun maintains: "we must analyze, as we try to grasp a present that is always degenerating, the ways in which ephemerality is made to endure. What is surprising is not that digital media fades but rather that it stays at all."¹⁷⁶ I present three approaches user's

¹⁷⁶ Chun, "The Enduring," 171.

have formulated to interrogate this surprise specifically at the level of circulation: linear, cyclical, and rhizomatic.



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The linear model plots memes along a Dankness vs Time axis. After the “neutral” birth of the meme, the first turning point it meets decides its fate: will it tunnel into the vortex of esoteric memes, or climb the content ladder and reach a

¹⁷⁷ *Meme Life Cycle Chart*, image, Know Your Meme, June 9, 2020, accessed May 1, 2023, <https://knowyourmeme.com/photos/1871107-meme-life-cycle-charts>.

¹⁷⁸ *Meme Life Cycle Chart - Frog Cycle*, image, Know Your Meme, August 11, 2017, accessed May 1, 2023, <https://knowyourmeme.com/photos/1284058-meme-life-cycle-charts>.

mass audience? It recognizes the possibility of meme death as that which either fails to reach a wide audience (“obscurity” path) or garners an audience far too wide (“normiefication” path). The meme also has a distinct “genesis point” that is marked “neutral”, implying that its source can be known and that it lacks inherent value. Value must be made through the process of circulation—which I argue is a process of ruination. This attitude demonstrates that the circulation of a meme imbues it with meaning, and that the secret to transcending death is “spawn(ing) a multitude of variations” like memes which undergo “immortalisation” or “ironisation” tend to do. “Ironisation” is further investigated by the frog-themed life cycle, which operates on the same assumption that there is an hierarchy of platforms. Assigning value-judgments to platforms according to their user base, and assumptions about how these users might identify, implicates notions of identity, authenticity, and kinship. What the cyclical model believes, and is somewhat occluded in the linear version, is that the memes are made from other memes: the point of origin is thus destabilized so that the un/dead rise again. Together, the linear and cyclical models describe a process of meme-ing that is hyper-aware of the network ecology, but only to the extent that memes are valued based on an in-group, out-group dynamic. While some meme scholars have argued that this is essential to the concept of a meme itself,¹⁷⁹ I believe this view fails to account for alternative conceptions of meme circulation that inform critical meme-making.

¹⁷⁹ Azar, "The Meme," *The Meme Is the Message*.

The rhizomatic model, too, grades platforms on the basis of authenticity (memes originate in the “Dank zone”), but undoes the hierarchy with multidirectional flows. It combines features of the linear and cyclical models to imagine a life cycle of memes that is contingent, decentralized, and nonlinear. Digital ruination is thus figured as a sort of entropic death, the

¹⁸⁰ *Meme Life Cycle Chart*, image, Know Your Meme, February 21, 2020, accessed May 1, 2023, <https://knowyourmeme.com/photos/1755230-meme-life-cycle-charts>.

circulation of memes following outward and inward trajectories which “oscillate ambiguously between instance and plurality.”¹⁸¹ *Neoliberal networked time* lingers in the interstices between each of the zones, gracefully sliding content from “normification” to “cancer” and back into the “dank” zone in less than a 24 hour time frame. In *Circulation and its Discontents*, McKenzie and Scott Wark explain that information technology “fragments individual subjects into dividual components, weaving each into the information production process to the point where it would no longer be possible to distinguish living from dead labor.”¹⁸² I bring this up to address the coexistence of not only machine and human labor in the circulation of content, but of dead and living labor. The rubble possesses value not because of its use-value but for its exchange-value, a fixture of the meme economy which has the potential to disrupt or boost the value-generation of a meme. In all of these examples, critical meme-making is a means for users to inspect the rubble-ruin, make friends, enemies, and *make believe*. The cosmologies of meme magic— and their constructions of center, peripheral, and liminal space— depicted in these models reflect new rhythms of movement which *are* discernible, if not frightening. Embodying repetition and endless referentiality, the meme encapsulates an out of scale experience of media’s “planetary distribution.”¹⁸³ Networked activity thus moves beyond a confrontation of ruin, and is an ongoing negotiation of the ruin’s aesthetics, politics, and critical capacity.

I would like to note that these three examples are sourced from Knowyourmeme, the implications of which are as follows. The only source information cataloged with these submissions is the time it was uploaded to the database. No information about the original date

¹⁸¹ Wark and Wark, "Circulation and Its Discontents," 303.

¹⁸² *Ibid.*, 297.

¹⁸³ *Ibid.*, 301.

of creation, when or where the uploader first encountered it, or even the tools used to create it are provided. Perhaps this information is irrelevant, as we will see, given that there is hardly ever a clear point of origin for memes (*who* made it or *why* it was made are questions which often escape the meme archaeologist) and their meaning is largely derived from the piling of plateaus. In the words of Hito Steyerl, “living and dead material increasingly integrated with cloud performance, slowly turning the world into a multilayered motherboard.”¹⁸⁴ To read a meme, you must read underneath, inside, and through it. This is a core issue for meme preservation: even if we can deconstruct its composite parts visually (we know how to distinguish font styles and celebrity faces, for instance), many data points necessary for complete comprehension remain unknown. And memes, like the avatar, are always in a process of becoming. Archiving memes in a manner such as Know Your Meme is an act of contextualization, stabilizing their narratives and choosing an interpretation— an act which runs up against their whimsical and dynamic nature. This effort arguably works toward fixing the meme’s meaning, and thus limiting its possibilities of re/mixing to more logical conclusions.

On the other hand, a meme archive— be it a personal collection on your phone or public collection like Knowyourmeme—does not strive for totality, but un/plays it. *Archival impulses* as a consequence of *Cycles of Dust and Debris* do not obsess over granular detail. In fact, most public meme collections are actually very *alive*. Though they do tend to settle for an explanation, they continually update old data to meet evolving trends in and uses of memes. The meme, like the avatar, is not a quantifiable or predictable object, but a vessel for experimentation that mediates our networked subjectivity. The shortcomings of the meme archive, then, might

¹⁸⁴ Steyerl, “Too Much.”

actually open a new vision of the archive altogether, one that accounts for *archival impulses* and honors the localized networks of knowledge that emerge.

What is almost always obscured in these theories about *Cycles of Dust and Debris* is labor. Not prosumership, not the free labor of content creation or affective labor of dressing the wounds where nerves were exposed, but the tedious and taxing labor of content moderation. Its results hypervisible and its workers fully invisible, content moderation has been described as “ghostwork”.¹⁸⁵ Content moderation has high stakes—working to make sure that I was the last group of kids who could stumble upon beheading videos in between playing Flash games and reading fan fiction—to make sure that there is some standard of safety and harm-reduction in networked spaces. Under *neoliberal networked time*, the content moderator is a human forced into cyborgdom—not through a synergy with the machine, but a demand to be machine-like (objective, detached, unemotional, and unafraid) when being tasked with cleaning the filth from the Internet’s sticky servers. Neoliberal globalization has pressured us to work faster in all industries, sectors, and nations, and promised little more than precarity as a result. But I draw attention to the content moderators specifically to say that for all the talk of meme magic (mycelial networks and algorithmic domination), there is actually a very human component that re/directs the rubble and its creative capacity. We might bend down to pick up the rubble and feel inspired, feel a sense of wonder staring at the microcosmic ruin. Following through with that movement, I suggest we take a second to slow down, hold our breath, and count to ten. Critical meme-making plays with the pressures and limits of our accelerated culture at the levels of content and form; however, it cannot help but reify the asymmetry of power by giving the

¹⁸⁵ Gray and Suri, *Ghost Work*.

vectoral class more stuff to own, more data to mine and refine their algorithms. Maybe Virilio's predicted "never-before-seen accident" to occur in the age of acceleration is actually the result of what happens if we all slowed down.

Content moderation and meme-making are both comparable to spiderwork in the sense that they involve a constant process of untangling an intricate web of information, be it for the purposes of self expression or a paycheck. As making meaning from the rubble-ruin is a similar process of coming through the *dust and debris* online, maybe this process of ruination could help us imagine an alternative model to content moderation that relies on networks of kinship and care, and not the payroll of vectoral powers. At the very least, this model of digital ruination reveals that the avatar's agency is not simply subdued by vectoral formations, but actually a potential source of creative resistance in networked space.

Continuing our tour of digital ruins, I present *The Deprecated Platform* through a case study of Adobe Flash. Foregrounding archival concerns together with prosumership, we walk through the ruins of Adobe Flash and reframe the fall of its empire as a process of ruination, rather than death per se. This model works through differing modes of temporality as I lay out the histories of web accessibility, design and game-making in parallel. The issue of preservation returns our attention to a more fundamental complication of capitalism: creative destruction. As for what is lost, the most opaque future that we identify in these ruins is one in which we did not give up privacy, ubiquity, or agency to realize a more usable or accessible Internet. The dis/continuity between *The Deprecated Platform* and other models of digital ruination pose interesting questions, and from here I begin an extensive investigation into the abject beauty of Adobe Flash.

Part III: Adobe Flash Case Study



Thumbnail from [YouTube video](#)¹⁸⁶ posted on December 31, 2020, the eve of Adobe's official discontinuation of support for the Flash Player. It is a remake of this [meme](#) that features an image of a rat smoking a cigarette instead of the Adobe Flash logo.

Counting down the days until Adobe would end support for their Flash Player, the Internet gathered in mourning. Many observed rituals of meme-making to express their complicated feelings. When language fails us, and we do not know what to say, a single meme goes a long way. While much of this content was produced in a state of sorrow or pain, the meme I present as an epigraph for this chapter uniquely conveys a hopeful ambivalence. Framed as a love letter to Flash, from Flash, it was posted on the eve of its very demise. The video conveys grief and hope intertwined in a thirteen second clip, reminding us that loss does not signify a lack. With 30,000 views and counting,¹⁸⁷ the meme mass-produces hope. After the Flash logo slowly fades away, the message remains, and we are prompted to wonder how we actually come to terms with change. The Internet grew up alongside Adobe Flash, myself included. In this meme, the Adobe Flash Player gracefully accepts its own death, realizing that the Internet has outgrown it, and that

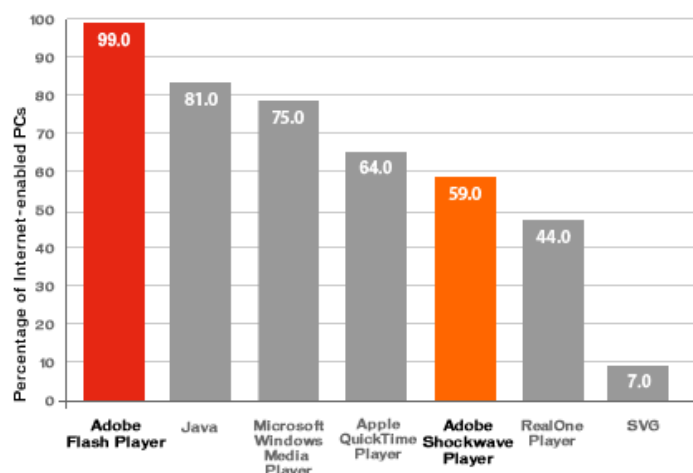
¹⁸⁶ "change da world," video.

¹⁸⁷ As of writing, the YouTube video has roughly 33,000 views. However, this does not account for the views on reproductions of this same video posted to other platforms online.

the Internet would continue to grow even without its support. This chapter ruminates on what made Flash such a beloved medium, and reflects on the process of falling out of love.

For added drama, if we peel back the cosmetic layer of this meme, we see that the subject of the original image was a rat smoking a cigarette. As YouTube commenters and Reddit lore weavers would say, the rat isn't smoking just any cigarette, but his last. Many users cite political satirist Art Buchwald's piece, *The Firing Line and the Last Cigarette*, to claim that "puffing a last cigarette before being shot is an ancient military tradition,"¹⁸⁸ a tradition which the rat rehearses in this meme. If the cigarette is known as a great companion to war, who was Adobe at war with? Some might say Apple, others might say it was the Web itself, or the avatar. The ruins and ruination of Adobe Flash present varying versions of this war—as any historian of war might expect—but together they reveal the *exposed nerves* and *archival impulses* of the avatar who must live amongst these ruins. As my primary case study of *The Deprecated Platform*, this chapter details the drawn-out process of digital ruination by following the overlapping histories which impacted, and were in turn impacted, by its decline. I argue that the history of Flash indexes the history of web design, standardization, and accessibility.

¹⁸⁸ Buchwald, "The Firing Line."



Sourced from Adobe's *Player Census* report from 2009.¹⁸⁹

In 2009, surpassing Microsoft Windows Media Player and Apple's Quicktime Player, Adobe reported that their Flash Player was "the world's most pervasive software platform, used by over 2 million professionals and reaching 99.0% of Internet-enabled desktops" in "United States, Canada, France, Germany, and Japan."¹⁹⁰ The history of Adobe Flash is the history of the Internet. Despite 99% saturation, a legendary status that its Silicon Valley competitors envied, Adobe Flash's ubiquity was still contested on one front: as closed source software, it contributed to the ever-present issue of fragmentation. Flash's legitimacy as a rich media application rested on the basis of browser incompatibility and minimal regulation of web standards; however, the forces which sought to replace it—namely HTML and mobile technology—would champion these causes only to produce an Internet fragmented all the same, if only with a new look and feel. Flash calls attention to some of the most contentious debates surrounding commercialism, open software, and creativity on the web.

¹⁸⁹ Adobe, "Flash Content Reaches 99% of Internet Viewers."

¹⁹⁰ Ibid.

I will take care of the details later, but for now I would like for us to consider this in the context of mourning: what can the death of Flash tell us about the specters who wander its ruins? As Flash game developer John Cooney woefully states in his 2017 lecture, *The Flash Games PostMortem*, “ubiquity dies with Flash if there’s no true replacement.”¹⁹¹ So who and what replaced Flash, and what have they done with ubiquity? This question leads us to probe the various history which inform the technical and fiscal infrastructure of the Internet, as we aim to unpack the implications of Flash’s ubiquitous presence in tandem with its potential for fragmentation: how is digital ruination counter/productive for realizing an open Internet? I address this question by assessing the claims made by leading web designers, advocates for open standards, and artistic interventions which interrogate such claims through playful use of the Flash medium. By “critiquing the notion of a platform as a stable configuration of hardware and software,”¹⁹² as Nathan Altice does in his book, *I Am Error*, I position this chapter not as a divergence from platform studies, but a challenge to it. Adopting his approach, I demonstrate that platforms do not live in a vacuum: “circuits, code, and console alike are shaped by the currents of history, economics, and culture—just as those currents are shaped in kind.”¹⁹³ I use the death of the Adobe Flash Player (which I will henceforth call *Flash*) as evidence of *The Deprecated Platform* to help us unravel the implications of platform death not as a singular choice or isolable moment in time, but as a protracted process which reveals larger trends in the context it serves.

The Deprecated Platform is unlike the other models of digital ruination, primarily due to its dysfunctionality and the unique archival concerns. Because the platform shut down, the

¹⁹¹ "The Flash Games Postmortem," video.

¹⁹² Altice, *I Am Error*, 7.

¹⁹³ Ibid.

content it once brought to life—animations, poems, games—have been rendered unplayable. Furthermore, the content’s file format might further problematize preservation, as is the case of Flash. Even when its files are rescued or an emulator is perfected, a tinge of decay remains: some files are corrupted, others stay lost in the scattered *dust and debris*, and the connection between game and avatar are permanently altered. The emulator is no simulacrum of the original media player—its design produces its own unique relationship to the file it reads and plays back, which in turn alters the avatar’s possibilities for critical play.

With the issue of preservation as our focal point of *The Deprecated Platform*, we return to a more fundamental complication of capitalism: creative destruction. Flash facilitated the emergence of creative industries like professional web design and indie game development. As these new professions were so stitched into the fabric of Flash—which for a time was the whole cloth of the web—the ruination of Flash also signaled the ruination of their industries. With precarity encroaching and the Flash industry grinding to a screeching halt—its many artists fleeing to the mobile gaming or web design markets—the digital ruins of *The Deprecated Platform* seem to resemble industrial ruins much more vividly than the other models. As for its temporality, the Flash file is something of a rubble-ruin. Emblematic of neoliberal networked time, Flash’s real-time rendering accelerated its popularity in the days of low bandwidth (slow Internet connection). It posed interesting questions for the avatar then, and continues to do so today in the context of preservation. *The Deprecated Ruin* also generates a “curious paradox,” as Olia Lialina points out in the context of GeoCities, a portal for hosting user-made homepages: “On the one hand, the shutting down of Geocities was no doubt a barbaric act. On the other hand, all the buzz it created and the fact that Geocities was eventually rescued and archived has created

this research opportunity to investigate the web as it existed in the 1990s in a more meaningful way than was ever possible before.”¹⁹⁴ Recognizing the double hermeneutic at play here allows us to view the contradictions that emerge from digital ruins, *exposed nerves*, and *archival impulses*. While mourning a corporation evokes a sense of guilt, and their poor preservation practices a stirring suspicion, the rituals of remembrance or collective preservation projects that transpire remind us that the Internet is also a network of care. As for Flash, the wonder and shame we feel when contemplating its ruin is also a matter of vectoral formations: building the Internet on closed software, in a culture of obsolescence, and according to the dictums of innovation further entrenches the asymmetry of power in the neoliberal age. With all this in mind, how can we look at the ruins and ruination of Flash as an ongoing process that is in flux with design choices, network trends, and developments in our political economy?

.swf: It’s Pronounced “Swiff”

Before going any deeper into the lore, I would like to contextualize Flash with some technical and business knowledge. To clarify, when I say Flash, I am referring to an ecosystem of software, as imagined by Anastasia Salter and John Murray: “the many incarnations of the Flash development environment, the different versions of the Flash Player, the related specifications and the bytecode produced by the Flash compiler and interpreted by the various players.”¹⁹⁵ It began as standalone vector-based animation software created by FutureWave Software in 1994, which named the improved version FutureSplash Animator in 1996.¹⁹⁶ Macromedia acquired FutureWave in 1996, rebranding this software to Macromedia Flash, and later renaming it

¹⁹⁴ Lialina, "Part 1: Ruins and Templates," Contemporary Home Computing.

¹⁹⁵ Salter and Murray, Flash: Building, 11.

¹⁹⁶ Ibid., 37.

Macromedia Shockwave Flash. After going through numerous hands and rebrands, Flash as we know it was born. The name of the output file, SWF (“Shockwave Format”), is a vestige of its previous ownership. As it changes over time, the name of the medium and its output file bear the markings of the *vectoral formations* that shaped it, its commercial ties materializing with every reference. With the release of Macromedia Flash 2.0 in 1997, the ecosystem incorporated the Flash Player, a browser tool for interactive web content which allows the live playback of SWF files.¹⁹⁷ Nearing the peak of its popularity in 2005, the SWF file was renamed to “Small Web Format” to reflect its popularity as a web-based application. The SWF file format is the compiled version of whatever was authored through the Flash development tool, packaging the vector graphics, a timeline to guide the animation of these graphics, and the code needed for delivering the promise of interactivity. The Flash Player interprets the SWF so that it is playable, making sense of the machine code that constitutes a SWF.

Its timeline feature and vector-based animation are important features that defined the temporality of the medium, as well as its creative capacity. Vector-based animation means that all movement is the result of code execution. But we should not see this as a computer replacing a person (as most animation was hand-made up until this point), but an interweaving of human and machine: the “flashimation” genre and its unique style was born of this augmented design process.¹⁹⁸ Flash files did not contain frame by frame animations, but the code required to draw these frames. I argue that the vector-based software internalizes the capitalist logic of maximal efficiency and expresses it at the level of playback, the moment at which the file comes to life.

¹⁹⁷ Ibid., 37.

¹⁹⁸ Cable networks like Adult Swim and Cartoon Network utilized the Flash medium, too, with titles like *Foster’s Home for Imaginary Friends*, *Chowder*, and *Aqua Teen Hunger Force*.

Flash does not comprehend motion; instead, it supplants this understanding with mathematical equations in order to simplify physics (gravity, mass, friction) and make graphics move fast. Given two key frames, it creates the in-between frames (tweens) in *real time* and iteratively loops through the entire timeline as it checks for adjustments (due to player input like a mouse click or left-arrow press) to be made to the formula.¹⁹⁹ Megan Sapnar-Ankerson's MA thesis from 2002, *The Code Looks Back*, exemplifies that tensions within this model were identified by Flashers (she herself is both a scholar and a Flash enthusiast) early on. She identifies two distinct sources of pleasure: the human's control of the look, and the code's control of the feel. While Ankerson argues that these facets make new media spectatorship interesting, she is more skeptical of its resonance "with dominant capitalistic ideologies,"²⁰⁰ a concern she claims to share with the net art community. Seeing the software "as a mass-homogenizing product,"²⁰¹ they fear its implications for the Internet at large, positioning Flash as the antithesis to the open and democratic ethos of the web. We might interpret Ankerson's comments as foreshadowing the ruin to come; however, prophetic clarity aside, I will later demonstrate how Flash creators un/played corporate tools and aesthetics for critical and artistic purposes.

Returning to the SWF, it is worth noting that Flash's efficient flow created small files (not usually more than 5MB) and a lightweight system for dealing with the slow Internet connections of the late nineties. Vector-based animation has been around since the sixties, but this commercial, artistic, and accessible application reinvented it as a novelty. To be fair, the Flash animation tool was still in its infancy, and was still unable to play back large files, let alone

¹⁹⁹ Salter and Murray, *Flash: Building*, 34.

²⁰⁰ Sapnar-Ankerson, "The Code," 80.

²⁰¹ Ibid.

compile them.²⁰² In *Generation Flash*, Len Manovich describes Flash aesthetics as “more than the result of a particular hardware/software situation,” defined by low bandwidth, flexibility of vector graphics, and browser plugin technology, but exemplifying the “cultural sensibility of a new generation.”²⁰³ Enabling the aesthetics of a soft modernism, the loop became the new index of the real. The Flash file will “loop endlessly—until the human intervenes by clicking.”²⁰⁴ Flash content is one way in which the avatar distributes agency on the web, as it provides new technological affordances for experiment. Supplying a level of interactivity to shake the skeletal web of pure HTML, Flash indexed many developments in how the web looks, feels, works, and plays. It configured the web as something beyond a rigid interface or streamlined experience because, as an engine of play, the Flash platform befriended the avatar.

While the Flash Player was a free browser plugin or desktop program for playing SWF files, Flash development software was a commercial tool: the drawing and scripting tools for making SWF files had to be paid for. Flash was an “ideological war zone” for negotiating tensions between closed technologies and open standards. As we will see, the variations of *vectoral power* which delineate these competing ideologies are quite subtle in the case of Flash: it combines aspects of proprietary and open software to meet the demands of its user base. Eric Raymond’s *The Cathedral and the Bazaar* describes the cathedral and bazaar models for understanding open source projects. While the cathedral model views software developers as lone wolf geniuses, much like the masculinist identity of the hacker or Silicon Valley visionary, the bazaar model frames software developments as a collaborative process where the

²⁰² "The Flash Games Postmortem," video.

²⁰³ Manovich, "Generation Flash."

²⁰⁴ Ibid.

“community of the marketplace brings many buyers and sellers together.”²⁰⁵ The development of Flash’s ecosystem borrowed from each model in terms of ideology and practical approach to development. For instance, Macromedia released the SWF file format specification in 1998—the consequences of which led to greater creative flexibility for Flash developers, and as we will see, a vibrant pirate economy. Under Adobe’s ownership, Flash’s player was made proprietary to maintain consistency across runtime environments, but kept open enough for users to create third-party tools for supporting Flash development.²⁰⁶ Adobe’s profit model relied on balancing the control and freedom of avatars which interface their software. Based on a hybrid economy which leases parts of the platform as open source software while retaining control of its vital organs (the Flash Player and API), Flash’s ubiquity was the result of carefully positioning itself amongst competing visions of the Internet’s infrastructure.

Despite its ubiquity, Flash was always in a precarious position: it had to negotiate control with the web browsers, search engines, and operating systems it depended upon. While the differences between PCs and web browsers were much more severe than today, largely due to a lack of hardware or web standards, Flash “homogenized the differences between browsers and operating systems”²⁰⁷ when no one else could. With web browsers and operating systems as hosts, the Flash Player was versatile and did not commit to a single host—it was something of a parasitic entity. Further, as a core component mediating the avatar by facilitating play, Flash was uniquely positioned to generate immense profit, even while the Internet was facing browser wars and a rising tide of web accessibility advocacy.

²⁰⁵ Salter and Murray, *Flash: Building*, 116.

²⁰⁶ *Ibid.*, 117.

²⁰⁷ *Ibid.*, 125.

Before moving forward to the other happenings of the Internet, I would like to consider the long term effects of the SWF in terms of digital ruination. While the release of its specifications in 1998 allowed for other development software to compile to the SWF format, the only possible format for any kind of Flash content was the SWF. In *Read/Write the Digital Archive: Strategies for Historical Web Research*, Ankerson explains that web crawlers, automated programs that systematically browse the Internet to analyze and index information, are typically designed for HTML and “have a hard time handling proprietary multimedia formats, like Flash files.”²⁰⁸ What would this *deprecated platform* look like today if its ruins were not exclusively SWF files? Could more Flash content be uncovered or still playable? While we can certainly cast doubt on Adobe for its refusal to change (many developers were requesting different output formats for years), we must also consider the Internet’s infrastructure in tandem. Ankerson also points out that, given the open specifications for the SWF format, “the erasure of Flash in the Web archive is not simply due to a proprietary format, but also to the purposes and values that guided the development of crawler software.”²⁰⁹ Regardless of who is to blame, if that is even something we want to do, Adobe’s choice to exclusively export to the SWF format haunts the ruins of Flash. This choice is ultimately, however, part of the machine’s beauty. The Small Web Format was easy to distribute across browsers and desktops, allowing users to avoid asking the question “Will this work on *my* machine?” Because the answer was almost always yes.

²⁰⁸ Sapnar-Ankerson, "Read/Write the Digital," 31.

²⁰⁹ Ibid., 45.



Arguably one of the first ever Internet memes, “All Your Base Are Belong To Us” first went viral in 2001 when it was remixed and posted to the Flash portal Newgrounds. It was such a shock to the mainstream that Fox News recorded a news segment attempting to explain the phenomenon.²¹⁰

Interactivity and the Romantic Age of the Web

Obscured by the mainstream discourse of technology (is it good? evil? too slow?), though arguably the most visible history which intersects with Flash’s is that of visual culture. Miltos Manetas, Flash romantic famous for “cybersquatting” the 2002 Whitney Biennial, described Flash as a “creative bomb.”²¹¹ Perhaps we can then extend our bomb metaphor to include Flash as a nephew to the “electronic bomb,” fathered by *vectoral powers* and mothered by creative

²¹⁰ “All Your Base,” video.

²¹¹ Pinheiro, “The Flash Artists Who,” Rhizome.

desire. Flash caused explosive changes in net art at the level of aesthetics,²¹² barriers for production and publishing, and possibilities of critique. I use the term *net art* to signify media which is created exclusively for the Internet. What unites these changes is the platform's affordance of interactivity, which made the experience of interfacing the Internet something playable, something game-like. For the avatar, this meant that the web became a more habitable world, something more than a text-based adventure. Flash configured the web as something beyond a rigid interface or streamlined experience because, as an engine of play, the Flash platform befriended the avatar.

Shaping a new relationship between the art and the audience that demanded participation, Flash transformed net art into a multi-authored performance, collapsing the distinctions between literature and gameplay. I do not argue that Internet-based literature has an exclusive claim to instability or multi-authored experience; rather, the unstable nature of any given text is augmented by the cybernetic encounter between avatar and web interface. To relate cybertexts,²¹³ borrowing Espen Aarseth's term, to the production of Flash content, brings play into conversation: "the cybertext reader is a player, a gambler; the cybertext is a game-world or world-game." Just how a video game cannot be reduced to pure virtuality or mere mechanical interaction, any text is fundamentally material in that it requires embodied engagement. Meaning itself emerges from the "intermediative" relationship between avatar and interface. Taking inspiration from Katherine Hayles's notion of the "intermediative" to describe the reflexive feedback loop between avatar and machine, Brenden Keogh explains that "any easy distinction

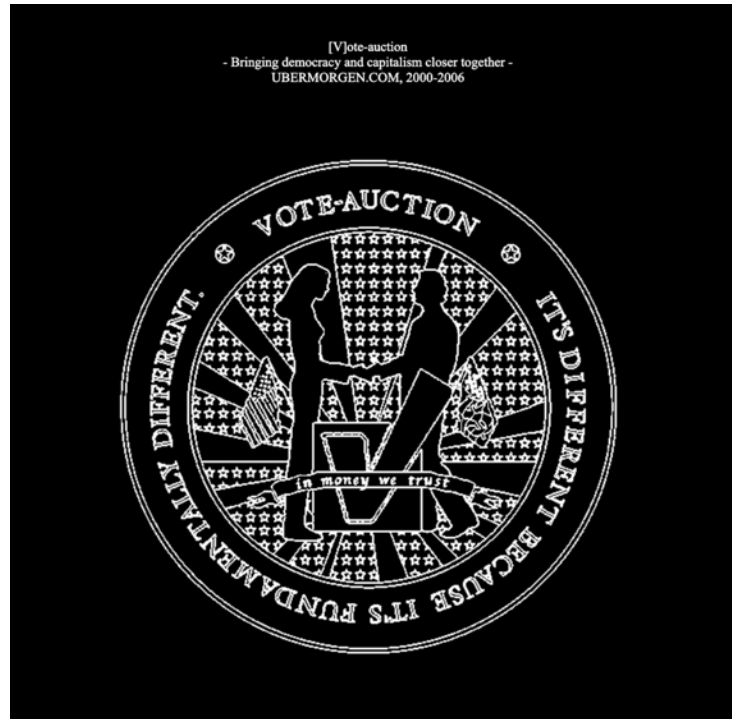
²¹² Olson, "The Flash Aesthetic," *A List Apart*. Ross Olson describes the "Flash Aesthetic" to describe web content that engages users through multimedia and interactivity.

²¹³ Aarseth, *Cybertext: Perspectives*, 3.

between agency that originates from the player or from the machine collapses in videogame play.”²¹⁴ Thus, he argues that the pleasure of digitally-augmented play “is to be caught up *as part of* the experience, to constitute the experience that constitutes *you* in turn.”²¹⁵ The Flash artist and player give the medium value, as it would otherwise be an infinite loop with little purpose beyond that of a hand-coded HTML button. This posthuman configuration also implicates an avatar that is situated; that is to say, the player is not *in charge of* or *using* the Flash platform—there is no hierarchy between the person and machine—but positioned somewhere between the body, mind, and machine. The avatar is not a god-author figure who decides meaning from elsewhere, but a co-author in making-meaning. The fall of the god-author and collapse of distinctions between mediums further constitutes the Flash platform as a kind of digital ruin, one which generates creative possibilities through destructive means.

²¹⁴ Keogh, *A Play*, 40.

²¹⁵ *Ibid.*, 41.



Screenshot from UberMorgen's VoteAuction website.²¹⁶

Since the early days of the Internet, net artists have been tracing the fault lines between the online and offline worlds. The epigraphic meme of this chapter, *All Your Base Are Belong To Us*, charts this development as it breaks into the mainstream, causing confusion, wonder, and laughter. The utopian visions of the Internet as digitally-enabled free market euphoria or ultimate archive were explored in early net art. Pieces like Ubermorgen's VoteAuction, a website launched during the Al Gore vs G.W. Bush election which allows visitors to sell their individual stake in democracy,²¹⁷ or Martine Neddam's Mouchette, the online diary of a fictional young girl who became a cult of personality on the early Internet.²¹⁸ Flash emerged after net art and before post-internet art, its content configuring something in-between and more chaotic. Flash art signaled a shift from the net art sensibility established in the 1990s, which explored the Internet's

²¹⁶ VoteAuction.

²¹⁷ Ibid.

²¹⁸ Mouchette.

futurity, and instead viewed the Internet as an engine and archive of its own obsolescence. Flash was coming of age during the dot-com fallout, and many net artists and web designers projected the “irrational exuberance” of this dot-com era onto Flash: Sapnar-Ankerson says that, in the early 2000s, “Flash sites were being talked about as the visual manifestation of dot-com excess, full of self-indulgence, gratuitous animation, and grossly overvalued hype.”²¹⁹ I argue that Flash artists actually resonated with this reputation, leaning into “self-indulgence” and using their work to reflect on the absurdity of the neoliberal moment which demands, by all means, that we be self-important market actors. As we will see in the case of whitneybiennial.com, some Flash artists embraced the commercial technology as a subversive means for critique of corporate branding strategies and aesthetics. Others embraced its loud, irreverent reputation, charting new territories of edgelording²²⁰ and “exploring the limits of bad taste”²²¹ by creating blunt, exaggerated, or offensive scenes of political commentary.

²¹⁹ Sapnar-Ankerson, “Read/Write the Digital,” 45.

²²⁰ Saying or posting something online that is intended for maximum shock value.

²²¹ Halter, *From Sun Tzu to Xbox*, 301.



Screenshot from the full recorded gameplay from Tom Fulp's 1999 Flash game, *Pico's School*.²²²

No topic was too taboo for Flash creators. The Flash medium first garnered mainstream attention with Tom Fulp's *Pico's School*, a game in which the protagonist, Pico, must defend his classmates from a group of school shooters. Fulp initially defended his game as commentary on the diminishing quality of the American school system, fanaticism, radicalization, and the Satanic Panic of 1990s. He has since apologized for his insensitivity, but the game nevertheless sent ripples throughout the Internet. Whatever his reasons may have been, *Pico's School* set the tone for Flash content: nothing was off limits. And Fulp's Flash portal, Newgrounds, would be the haven for strange and deranged media. It is worth noting that this game actually predates ActionScript, the scripting language introduced in 2000 which heightened the complexity of Flash content that could be made. Many Flash enthusiasts believe that this game actually spawned the point-and-click genre, a style of gameplay with rather rudimentary mechanics (as the name suggests), and of which many mobile games today derive their look and feel. Despite the gaming industry's refusal to acknowledge its immense influence, Flash's history is the history of indie gaming.

²²² "Pico's School," video.

Returning to the topic of edgelording, the outbreak of Flash content in the wake of 9/11 and the War on Terror was vulgar enough to make any parent fear for their child's safety online. Titles such as *Shoot Bin Laden*, *Suicide Bomber Game*, and *Blow Osama to Hell* were splatterfests with little regard for the dignity of those they seek to represent, "crafting an elaborate revenge fantasy"²²³ for an implied White, American audience. In *From Sun Tzu to Xbox: War and Video Games*, Ed Halter argues that the extremely edgy quality of these games administers "an ambiguous political valence. They can be taken as examples of American patriotism gone wild, or overblown parodies of the same."²²⁴ Flash games in the early 2000s thrived inside the liminal space between satire and hate, gathering a cult following of desensitized individuals, or desensitizing those who had not yet been fully indoctrinated into the spectacle of violence (perhaps because they were children, like myself at this time). These gory games eventually extended their reach to include figures such as Saddam Hussein and Kim Jong Il. Here is where my analysis departs from Halter's, as I point out yet another emergent protagonist of Flash games during this time: President George W. Bush. Another iteration of Flash creators "playing with the shock of the forbidden,"²²⁵ titles of this genre included *Throw a Shoe at Bush*, *Bye bye Bush*, and *Bushism-erator*. While these games did not necessarily take on a strong antiwar, or even anticapitalist stance of other left-of-center Flash games, they demonstrate that criticism of the political establishment did take place in Flash content, and provided sadistic fulfillment of anti-American fantasies, as well.

²²³ Halter, *From Sun Tzu to Xbox*, 298.

²²⁴ *Ibid.*, 300.

²²⁵ *Ibid.*, 305.

Hastily-made and politically current, these games demonstrate that Flash's quality of being made real-time was also enacted through the choices of the game-maker. Following Flash content was a way of following current events, something I recall even from my own unsupervised childhood of watching the news and then finding people had already responded with a Flash game the very next day. The flashy shamelessness of Flash's artists reflected the ethos of independent publishing. For as many thoughtful, graceful, and heartfelt works that were made with Flash and garnered an audience through its network, there were twice as many crude, vulgar, and janky works with three times as many hits. In either case, the Flash ecosystem presented an alternative to gate-kept industries with high barriers for entry and a limited interest in experimentation. It disrupted the animation industry, guided the indie game scene from infancy to adulthood, and oversaw pivotal developments in net art. Flash's reputation revolved around this facilitation of multimedia experimentation and empowerment through independent publishing. As John Cooney, founder of Flash portal Kongregate, would describe it, Flash was the "prototype indie" which taught independent creators how to handle self-directed and self-published work. Cultivating a fan base was a key component of this strategy, as the publication of Flash content constituted a sort of networked performance set in "the wild west of gaming."²²⁶ The limitations of Flash as a means for independent publishing would eventually unravel this tapestry depicting indie heroes, corporate villains, and outsider aesthetics.

While I may have painted a picture of flash content as blatantly offensive and immature, I hope to remedy its reputation somewhat with a discussion of whitneybiennial.com. Staged by artist collective electronicOrphanage as an "online foil" and "counter-exhibition" to the Whitney

²²⁶ Flash Game History.

Biennial in 2002,²²⁷ the website was designed mainly in Flash and, both visually and technically, was in stark contrast to the polished net art pieces actually featured in that year's biennial. By choosing Flash as its medium—which, at the time, was despised by net artists for its proprietariness—its creators sought to merge counter-culture with consumer capitalism. A networked performance in co-optation, electronicOrphanage's founder, Miltos Manetas, described its reliance on commercial authoring software as an un/play of corporate branding strategies. As Lucas Pinheiro explains in his analysis, "Manetas took on the Whitney as a performative meditation on the institution's brand value, which he did by appropriating it from the outside, by cybersquatting the Whitney's domain without the museum's consent."²²⁸ The ambiguous politics conveyed by whitneybiennial.com reflects the contradictions of meaning-making online, and works to both challenge the dominance of *vectoral powers* while giving in wholeheartedly. whitneybiennial.com would foreshadow the co-optation of Flash by amateur artists over the next few years, as well as the ambivalences they would embody as independent creators dependent on commercial software.

Many Flash creators were young and self-taught, but as they entered the Golden Age of Flash and a pirate economy emerged, these artists would quickly realize the monetary worth of their labor. Flash content was aggregated on Flash portals, hosting sites with a variety of tastes: Newgrounds for edgelords, GirlsGoGames for celebrity-crush-wish-fulfillment, Nitrome for cutesy arcade adventures. With a consistent revenue stream through webpage ads on personal websites, the gold rush economy began around 2002. Many hit titles of the Flash genre were born around this time, and many memes were generated in the process—even games as memes.

²²⁷ Pinheiro, "The Flash," Rhizome.

²²⁸ Ibid.

Pico's School witnessed many re/makes, usually with alternate endings intended to convey something cheesy, but meaningful. From 2000 to about 2006, we see the First Arc of the Golden Age of Flash. During this time, pirate culture solidifies, as well, with ships sailing towards islands of Flash creators with little-to-no protections. The SWF file contained minimal security measures for anti-piracy, such as the site-lock feature, which configures the file to only be playable when the domain it is being hosted on matches a given list of valid domains. However, with the SWF specifications made public, decompilers were floating around the Internet, too, making it easy to “crack” the file and fix it up (or tear it up) so that it could be hosted on a Flash portal of pirated content. The established Flash portals like Newgrounds could only help so much— they might hire development teams for more making polished games or license a particular game from an independent creator, but Flash developers were mostly helpless.

Luckily, Adobe's acquisition of Flash in 2005, in tandem with the birth of the sponsorship market and the Flash Game License, marked the Second Arc of the Golden Age of Flash.²²⁹ Mochi Media, for instance, provided a self-service approach to in-game ads so that even after a stolen game was published elsewhere, revenue would still be directed to its original creator. Flash portals such as Kongregate began to share a percentage of banner ad revenue with developers who hosted on their site. The Flash Game License established the sponsorship market by providing a space for developers to showcase their work to potential sponsors and negotiate deals through public transactions (a feature intended to ensure competitive bidding and prevent anything shady). The Second Golden Age of Flash witnessed Flash become an industry. I argue the impact of this professionalization is two-fold. With the profitability of Flash content now an

²²⁹ LimeWire and Napster, peer-to-peer file-sharing software for music were both sued around this time, as well, indicating an Internet-wide crackdown on piracy in general.

explicit motive for its creation, Flash is put in a precarious position: no longer a simple labor of love, this full-fledged industry is beholden to the interests of capital—and its tendency for creative destruction. Aside from its new disposition to processes of ruination and the preservation concerns that follow, the Second Arc also created a new limit on Flash’s future: what happens when the well runs dry? As we will see, the limit to enthusiasm over Flash was defined in part by the crumbling pathways to content monetization. The other part, which I will now explain, is that web designers and users were growing tired with “privileging aesthetics over accessibility,”²³⁰ and the ongoing battle for web accessibility and openness would come to a head just a few years down the line.

Web Accessibility, Usability, and Standards



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Taking a step back from Flash’s gory art scene, we now pivot to web design as we listen from web designers and web accessibility advocates. First and foremost, as a browser extension,

²³⁰ Kennedy, *Net Work*, 56.

²³¹ U/vitaminsurgery, *Virgin 2019*.

²³² Ibid.

the history of Flash is the history of web navigation, design, and usability. Helen Kennedy argues that web design is a culture and practice “suffused with ethical inflections” which get played out at the levels of usability and accessibility. What constitutes “good” or “bad” design reflects the values of the practitioner, and the values which they believe should guide the web on a fundamental level.²³³ Despite the implication of rigidity that comes with standard-making, web design practices and their moral evaluations were discursively produced. What matters here is that web designers did not seek to amorally serve capital in the way they perceived Flash as doing. However, as previously discussed, Flash’s history is similarly imbued with moral ambiguities as it juggles corporate interests with those of its development community.

During its prime, Flash content was seamlessly woven into the user experience—until a single loose thread, like a laggy load time or interference of malware, would unravel the entire thing. But the streamlined experience was not the primary concern for web developers in the early 2000s. They sought to realize “Tim Berners-Lee’s original dream of the web as an open, interoperable, and accessible medium, whose power would be in its universality and access to which by everyone would be an essential aspect.”²³⁴ We must understand the motivation for web standards and the campaign to end Flash’s rule, then, was to materialize this vision of the web. The history of Flash in the context of web design charts the sharp aesthetic turn design initially took in the late 1990s, followed by its gradual turn towards prioritizing standards and accessibility in the late 2000s.

²³³ Kennedy, *Net Work*.

²³⁴ Kennedy, *Net Work*, 9. Tim Berners-Lee is the computer scientist credited with inventing the World Wide Web.

When the FutureSplash Animator (Flash's animation-only predecessor) introduced animation to the web, it was first adopted in corporate branding strategies. Its first customers were Disney Online and Microsoft, which drew enough attention to its owners, FutureWave Software, that it would merge with Macromedia just a year after its release in 1997. Kennedy describes the consequences as a "furore," with animated splash pages finding their way onto nearly every site, and even entire websites being made with Flash.²³⁵ She argues that the entire visual culture of the web was influenced by the aesthetic possibilities and limitations of Flash. But when web design critic Jakob Nielsen published his anti-Flash manifesto, *Flash: 99% Bad*, the guilt began to set in: what did the ubiquity of this proprietary platform mean for the usability and accessibility of the web still to come? He argued that web usability was actually discouraged through Flash, as it betrayed the core tenets of web design: it broke with certain conventions, like the color-code system for links or the ability to rescale text, which allowed web pages to be indexed for archival purposes and helped accommodate the needs of Internet users with physical disabilities. Flash was problematized not simply for being closed source, driven by profit motives, or embodying the pervasive desire and unyielding governance of speed, but because it represented "bad" design. For all the sweet-talk coming from Flash game developers about "low barriers for entry" and "amateur friendly software," in the context of web development, Flash "diminished professional standards" by haphazardly producing inconsistencies at the level of code, and thus at the level of accessibility. While this means hell for accessibility standards, it is also a testament to how Flash was so impactful for its time as the only thing that *just* worked. Orr

²³⁵ Kennedy, *Net Work*, 55.

rather, because Flash was the de-facto standard for interactivity, corporations felt less obliged to work towards interoperability.

The World Wide Web Consortium (W3C) was first established in 1994 at Massachusetts Institute of Technology, and was responsible for producing HTML specifications and web standards. To this day, it consists of businesses, governmental bodies, and academic institutions. As the web was undergoing its graphical turn, W3C set a recommendation that CSS (Cascading Style Sheets) be used for managing the visual display of HTML.²³⁶ While this certainly enabled and inspired greater creativity, HTML lacked a keystone of Berners-Lee's dream which Flash's platform proudly claimed: interoperability.

The early Browser Wars between NCC's Netscape and Microsoft's Internet Explorer were fought over the desire to dominate the web browser market. Netscape's key selling point was its novelty: it introduced a graphical user interface (GUI) to browsing the web. Microsoft, on the other hand, bundled Internet Explorer with its Operating System, creating a less tedious set-up for the user which would otherwise have to go out of their way to choose and install a browser. But the browser incompatibility was not without serious implications for its users. In one grave example of how the razorblade of innovation cuts into the real world: victims of Hurricane Katrina were unable to register for federal emergency help without the Internet Explorer browser.²³⁷ Netscape or its competitors did not suffice. Technical standards are politics by other means.²³⁸

²³⁶ Kennedy, *Net Work*, 54.

²³⁷ Krakow, "Want to File," NBC.

²³⁸ Scholz, *Digital Labor*, 10.

With Netscape in the lead at least until the late 90s, this battle proved that standards had no skin in the game: victory was not on the basis of which platform resonated with the principles of openness or accessibility, but who could build a flashier browser. As a result, incompatibility was built into the browser, making the job of web designers even more fraught. Flash's legitimacy as a rich media application thus rested on the basis of this browser incompatibility and minimal regulation of web standards. Many web designers felt that Tim Berners-Kee's "ethical ideal" of the web "could not be realized without the cooperation of big browser companies."²³⁹ But browsers had no interest in listening to accessibility advocates whom they viewed as obstacles to innovation. The ideal Internet envisioned by the web designer was fundamentally at odds with that of the web browser.

In 1998, the Web Standards Project (WaSP) was founded as a grassroots organization committed to increasing web accessibility by means of standardization. In their mission statement, they proclaimed that "the web would fragment into a tower of digital Babel" if "these big players continued to insist on building incompatible browsers and fighting for web supremacy."²⁴⁰ WaSP identified that fragmentation was immanent to the Flash platform, foreshadowing the great loss that many users felt when Adobe ended its support for Flash. WaSP warned us of what would happen with an overreliance on Flash, but we didn't listen. Looking into this lost future, one in which web accessibility advocates were treated with the gravity they deserve, a silhouette of *vectoral formations* emerge, outlining the conflict between regulability,

²³⁹ Kennedy, *Net Work*, 63.

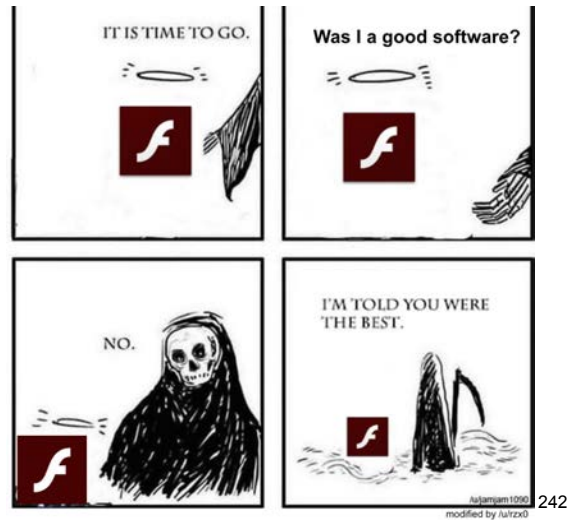
²⁴⁰ The Web Standards Project.

profit, and accessibility in the networked world. Who should hold who accountable, and at what point was it too late to intervene in the ruination process?

In this light, Flash is positioned as counter/productive to realizing an open Internet. As a *Deprecated Platform*, we might read its demise as an assurance that fragmentation is an issue being actively addressed; however, after it crumbled like a “tower of digital Babel,” it became clear that simply wiping the web clean of Flash would not simply fix the Internet. We ponder the ruins of *The Deprecated Platform* that is Adobe Flash and feel a sense of wonder at what Flash made possible, and the bright future that will be realized with HTML-committed web development and Adobe’s monopoly defeated. At the same time we feel a sense of shame in mourning a company that made the Internet fun for us, and entirely illegible for others.

When the Golden Age of Flash was entering its phase of decline around 2010, and HTML was being heralded as its replacement, it was clear that HTML was still in an embryonic stage.²⁴¹ By acknowledging this reality, we are able to unwind a linear reading of tech development that assumes HTML earned its place in the top ranks due to its hard work and innovative strides, revealing instead the *vectoral formations* which co-opted HTML’s “progressive” and “forward-thinking” reputation. While Flash’s legacy and business model rested on the basis of browser incompatibility and minimal regulation of web standards, the forces which sought to replace it—namely HTML and mobile technology—would champion these causes only to produce an Internet fragmented all the same, if only with a new look and feel. Enter the mobile revolution.

²⁴¹ "The Flash Games Postmortem," video.



The Mobile Revolution and the Rise of Platforms

The history of Flash is also framed by the history of the touchscreen mobile technology, platform capitalism, and the attention economy. After Steve Jobs famously declared Flash unfit for the mobile age by banning it from the iPhone, bells began ringing across news media outlets to commemorate the “Death of Flash.” Of the many contested claims for who killed Flash, the most common narrative names Steve Jobs as the lone gunman, the iPhone his magic bullet. Examining his derisions of the platform laid out in his infamous 2010 letter, “Thoughts on Flash”, we notice the same talking points later parroted by media outlets: Flash is a security nightmare. Flash is corrupted by Adobe’s corporate greed. We are going to war, but not just any war—the fight for open standards is an ethical battle, one which seeks to disrupt the entire infrastructure of the Internet for the betterment of all its users.²⁴³ Most of these arguments rest on

²⁴² *Wholesome Meme.*

²⁴³ Jobs, “Thoughts on Flash,” newslang.

naive assumptions that go largely unchecked, possibly due to the infallibility of Jobs's reputation, or the pent-up frustration users felt from having to install a new update for Adobe Flash every other week. With HTML5 championed as the Internet's savior, and thus positioned as the antithesis to Flash, it was quickly brought to the public's attention that an alternative was conceivable. The first assumption which I take issue with, that I explained in the previous section, is that HTML5 *already* was a suitable replacement for Adobe Flash. The second assumption, which I will not investigate, is that rejecting Flash as the de facto standard for implementing interactivity into a browser would *naturally* shape the Internet into the decentralized and democratic ideal of its most sincere advocates. There is no magic bullet, nor is there a savior.

While many of Jobs' criticisms rang true, his choice did not end the perpetual power struggle between corporate and democratic interests in the digital realm. The war between Apple and Adobe that ensued was not waged simply for the public good; rather, we were able to watch Internet traffic—and the avatars which surmise such traffic—migrate to mobile phones for internet access and forsake the web for a more “intuitive” and “optimized” experience.²⁴⁴ For Flash developers interested in game or web design, the revenue streams were also much more reliable in the “app” market ecosystem: this was due to the deadly combination of decaying worth of web page ads and a shrinking player base. The Flash-focused career was nearing the state of obsolescence. Flash developers who had made a career out of Flash turned to mobile app development, Unity development, or web design. The Flash developer, thirsty for a secure livelihood, would go on to follow whatever revenue streams they were equipped to handle.

²⁴⁴ See this [video edit](#) containing every time Mark Zuckerberg says “experience” in the Meta launch ad.

With more promising pastures of profitability than HTML could ever guarantee, the platform became the dominant interface linking the avatar and the network. The concerns of regulability also shifted. The concerns surrounding possibilities of regulability that came with Flash—accidentally downloading malware or losing original content to Flash pirates—did not translate one-to-one on platforms. Instead, the software company itself sat on its own throne of regulation: Apple controls what software is allowed on our phones, Facebook shamelessly records and sells our private data, YouTube and Instagram creators alike are at the mercy of their platform’s free speech policy. Opposing the “decentralized, “grassroots” and “collective curation model” of Flash indie game development, the smartphone app market adopts a “corporate-controlled model of curation.”²⁴⁵ As the app market took over an increasing share of casual and indie game audiences, *vectoral formations* began to shift in its favor, producing a class of developers who are “utterly at their mercy.”²⁴⁶

Reflecting on these walled gardens, we can observe that digital ruination is a process beholden to the pressures of profit, of course, but here I would like to return to the role of the avatar. As Jonathan Zittrain laments, this continued march towards platformification leads us away from a generative net and towards profit-centric creation. As the avatar is increasingly surveilled, commodified, and cornered into closed ecosystems, and thus guided by algorithmic governance, how can we refuse the allure of nihilism and instead view digital ruination as both a degenerative and regenerative force?

²⁴⁵ Ford, Green, and Jenkins, *Spreadable Media*, 243.

²⁴⁶ *Ibid.*

Flash's Afterlife

In July of 2017, Adobe officially announced that it would deprecate the Flash platform after December 31, 2020.²⁴⁷ Confronted with the immediate prospect of ruin, their warning triggered the *archival impulses* of users across the Internet, like a shock to the nervous system. To be fair, though, pulling support for Flash had become very popular since Apple decided to do so. YouTube, Firefox, even Facebook followed suit. But no matter how protracted this process of digital ruin had become, the question of preservation remained. What would happen to the Flash portals? What about the games, poems, animations? What about the *stories*? If Adobe will not take care to preserve them, who will?

Digital preservationists are often framed as either data hoarders²⁴⁸ or hailed as heroes of digital heritage.²⁴⁹ Whatever they may be, they have sharp *archival impulses* and the skills needed to make up for a lack of institutional support in these efforts. Thanks to Flash's announcement being ahead of time, large-scale grassroots preservation efforts emerged to tend to the *exposed nerves* of the Internet. BlueMaxima's Flashpoint, an open source project by Ben Latimore which began in December of 2017, hosts the largest archive of SWF files to date and features a downloadable emulator.²⁵⁰ The most popular emulator for Flash is called Ruffle. Written in Rust, so as to solve the many security pitfalls that impacted Flash's bad reputation, it works as a web plug-in, desktop application, or smartphone app.²⁵¹ It is an entirely volunteer-run project, relying on the thankless work of the caretakers who make digital ruination a

²⁴⁷ Adobe Flash," Adobe.

²⁴⁸ Melendez, "Delete Never," Gizmodo.

²⁴⁹ Paul-Choudury, "Digital legacy," NewScientist.

²⁵⁰ "Welcome," BlueMaxima's Flashpoint.

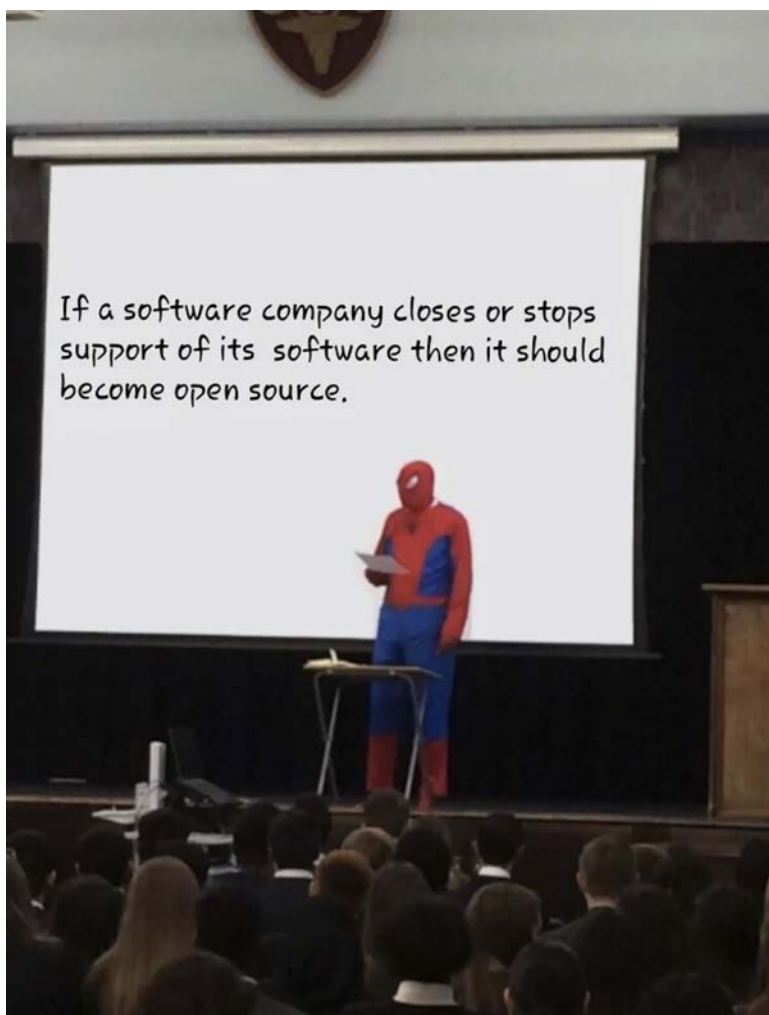
²⁵¹ "What is Ruffle," ruffle.

re/generative process. As commendable as this effort is, it points to the potential problematics of preservation, too. It's not easy to identify the owner of certain Flash content, given the norms of anonymity or pseudonymity in Flash culture. Furthermore, many developers might not want their content preserved, as they feel it might not continue to reflect their view of the world (the Flash community was young, too, once, and prone to rash decisions).

All of that being said, plenty of Flash content has yet to be resurrected, currently existing in fossilized form. Many SWFs you encounter will be corrupted in some way— missing sound or image files needed to recreate the full experience—or unplayable due to security measures implemented to keep pirates at bay. Some Flash portals actually still run as usual, like Newgrounds, with a built-in emulator to keep the experience smooth. Others resonate with the model, *sights/sites of ruination*, as they maintain the same branding and layout, but host HTML and Unity games now instead of Flash games. They might still wear the robes of their former glory, but no longer possess the content or magic they once did.

While I contend that projects such as BlueMaxima's Flashpoint and the Ruffle Emulator might showcase the Internet as a network of kinship, I do not wish to settle for these models of responsibility. Why was Adobe not held to account for choosing to deprecate the Flash Player instead of making it open source? Herein lies the complication of prosumership and content creation. While the free and affective labor of content creation is surveilled as a profit-seeking mechanism for the platform, the exploitation of the user is visible on multiple fronts. The platform may view the avatar as both a producer and consumer of data, but it does not view the avatar as an owner. Yet another tension arises. Notably, the tension between regulability, data privacy, and censorship. We need a transparent and collectively-produced model of data privacy

and content moderation for our platforms. What happens when people grow *tired*? The personal time and effort that goes into Internet preservation projects is not enough. We need institutional support if we are going to change the way things are.



Conclusion

In March of 2023, the Internet Archive lost a deadly lawsuit from publishing giants Hachette Book Group, HarperCollins, John Wiley & Sons, and Penguin Random House over its National Emergency Library. This project provided public access to books during the Covid-19 pandemic in 2020, when physical libraries and their collections were largely inaccessible. The federal judge ruled in favor of the publishers for taking issue with lending out multiple digital copies of copyrighted books for free, making “derivative works by turning print books into e-books.”²⁵² Due to this alleged “mass copyright infringement,” the Internet Archive is under heat for both its pandemic relief effort and system of “controlled digital lending” which prevents users from pirating a book they borrowed. Judge John G. Koeltl claims that “there was nothing ‘transformative’ about its use of e-books that gave it the right to ‘scan those books and lend the digital copies en masse.’”²⁵³

The Internet Archive is a nonprofit “digital library” which provides public access to websites, books, videos, photographs, obscure file types like SWFs, and other research materials for free. Sites that are now defunct from over twenty years ago, or might be hard to find due to change of location, are all made accessible through their Wayback machine. Numerous console, arcade, and Flash games are playable through their game library and reliable emulators. For some out-of-print porn magazines and obscure editions of books, IA is the last thing keeping them from completely disappearing. With their entire digital library collection at risk, the Internet Archive lawsuit demonstrates that digital ruination cuts along the virtual/real divide, bleeding into the present moment in ways less obscure and much more frightening than we might

²⁵² Burga, “Internet Archive.”

²⁵³ Ibid.

imagine. For the platform studies scholar or media archaeologist, or really for anybody curious with Wi-Fi, the Internet Archive is critical to our work. IA helps us resolve fundamental tensions between an accelerated rate of cultural production and persistent culture of obsolescence in the digital world. Now more than ever, *exposed nerves* and *archival impulses* are proving to be critical for preserving the Internet and its messy, complicated, and fragmented history. No matter how committed or resilient the avatar strives to be, we cannot face digital ruins alone. While they may help us resist the decimating power of *vectoral formations*, we cannot delude ourselves into thinking that *archival impulses* are enough. We know that the Internet *does* forget, despite the insistence otherwise, and though IA might not be a solution, it provides a necessary counterpart to networks of care: institutional support. Networks of care are one thing, networks of accountability are another. We should strive to create a world in which they overlap.

Legal scholar Michelle Wu argues that the judge's "reasoning was based on one assumption: that copyright primarily is about authors' and publishers' right to profit," given that the Copyright Clause itself seeks to disseminate knowledge explicitly by means of copyright.²⁵⁴ IA's founder, Brewster Kahle, identifies that this lawsuit is a step in the wrong direction for public libraries: "Libraries are more than the customer service departments for corporate database products. For democracy to thrive at global scale, libraries must be able to sustain their historic role in society."²⁵⁵ Meanwhile, the United States is undergoing a series of book bans across the country²⁵⁶ and an attempted merger of Penguin and Simon & Schuster was just blocked in a federal antitrust lawsuit.²⁵⁷ While much of the backlash against IA revolved around

²⁵⁴ Wu, "When You Buy a Book."

²⁵⁵ Ibid.

²⁵⁶ Garcia, "American Library," American Library Association.

²⁵⁷ Associated Press, "Judge Blocks," NPR.

protecting authors and their livelihoods, reality suggests otherwise: publishers do not care about the dissemination of knowledge, but the size of their market share. If, after IA appeals the judgment, and they are struck down yet again, what does this mean for the future of public libraries? Or the history of the Internet? Does it really mean we have abandoned art for profit's sake?

To conclude, I would like to point out that there are numerous examples of digital ruin which have still gone unaddressed, by myself and those whose work I build upon. Here, I propose one such example. Infomart, the focus of the first chapter, may have appeared to be an obscure example (and oddly specific to me, someone raised in Dallas). But ruination in the Information Age is not restricted to cities striving for Silicon Valley status, and actually happens in places more intimate than the downtown scene. Ghost kitchens, dark kitchens, cloud kitchens, virtual kitchens—whatever you want to call them—have been replacing restaurants since the Covid-19 pandemic increased the popularity (and necessity) of take-out. Like the typical platform, the ghost kitchen owns nothing: under the veneer of assisting small restaurant owners as they try to stay in business, they co-locate kitchens for virtual restaurants using space in an existing restaurant's kitchen. They consolidate the corporate chain by allowing for more fast-food delivery without the expenses of a brick-and-mortar.²⁵⁸ For celebrities and influencers looking for their next brand outreach, they can utilize the ghost kitchen like a merchandising opportunity: every item on the menu specially curated, named, and approved by the person-as-brand.²⁵⁹ Clearing the bodies out from a once-crowded space and positioning it as a

²⁵⁸ Friedlander, "The Mysterious Case of the F*cking Good Pizza."

²⁵⁹ Celebrities like musicians Mariah Carey and Tyga Mention and influencers like YouTube star MrBeast are just a few examples of virtual kitchens as merchandising.

node in the network of digitally-mediated transactions, this kind of digital ruin keeps the business alive only as the physical counterpart to a virtual storefront to be mercilessly tossed around from one human brand to the next. I could go on, but I think the point is clear: because the digital/physical gap is closed, *sites/sights of digital ruination* are exceedingly common.

The models for ruination I propose are varied in nature, scale, and source. With the information presented in this project, I hope to inspire a more experimental, deliberate, and mindful usage of networked technology. And for the fields of platform studies and media archaeology, I believe my contributions to be more than enough material for imagining the “circuitous routes” and “lost histories” produced by and productive of networked technology. I hope the reader begins to see games in new places, not just with a critical eye for *vectoral formations* and their dangerously playful design patterns, but as a reminder that we have the power to intervene in the ruination process. Through un/playing, re/skinning, and re/writing, we can ensure that the avatar remains a site of self exploration and experimentation. The networks of kinship that emerge from shared tastes, ideologies, or identities prove that we do not respond passively, or alone. Algorithmic domination is something we negotiate and struggle against together. Opening up analysis of the platform to include its articulations of play, labor, community, and space ensures that our conceptual framework of digital ruins accounts for the ghosts in the machine as they mingle with the living.

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