Mike Pepi

TOOL TIME
HOW TECHNOLOGY USES US

Why do we have such a difficult time coming up with a reliable definition for "technology"? For one, just when we think we've pinned it down, it refuses to stand still. Do we have any real way of maintaining a truth about a category that is constantly updating, innovating, and mutating in relation to every other concept we might use to define it? We frame technology as an other, somehow alien to our humanity. This problem of recognition becomes even more complex when we speak of the relationship between art and technology, two poorly defined terms with deeply intertwined applications. In *Art and Technics*, urbanist, cultural critic, and theorist of technology Lewis Mumford tries to make sense of the divergence between art and technology. To avoid ambiguity, he orients his definitions around a universal origin point. For Mumford, in its most pure state "art" could be defined as "the expression of the inner life without any reference to physical media and processes and concrete operations..."[1] He defined "technics" as "man's control of the forces of nature." Written in 1951, these definitions now seem quaint. Mumford conceded that "in actual history, this separation [between art and technics] does not hold."

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In the time that has passed, however, it seems a little easier to distinguish between art and technology. As each concept grew more complex, so did its signs. Even before modernity, the role of the artist became decoupled from the idea of a creator, a fabricator of objects, a maker of form. The artist would work with her tools, but they were a means to an end, an ideal that a mere craftsman—a technologist—might never attain. Modernity's curious accomplishment was to preserve the sacred role of the artist as a transcendent, medium-agnostic truth seeker, while doubling down on the notion that to critique a medium one had to subvert it. In the West, the artist engaged this trope all the way from Dada to abstraction to conceptualism, conflating transcendence with impracticality. To make something out of the functional fabric of society was verboten, or at least sequestered to the field of design.

The highly coded set of accepted practices for art and its media—some of which remain unchanged since antiquity—have not kept pace with the ever-emerging affordances of digital technology. While artists use digital media frequently, at the root of the art and technology partnership is an uneasy alliance. The gap

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among their respective institutions, practices, and mores and those of the technology industry and their products—the fiber optic cable, the screen, or the handheld device—has not been truly resolved. It's for this reason that as technology entered everyday life, its acceptance into the world of art met resistance. In all this, one thing remains consistent: the moment a new tool is introduced, its reveal is followed by a crisis, a panic, even, about the role that art will play in the array of that tool's uses. Over the past decade, we have witnessed this cycle on a grand scale. In the span of just a few years "disruptive" digital technologies transformed the public sphere, solidified institutional power, and captured the cultural imagination. In just as short a time, the same Silicon Valley ideology that motivated this historical turn was laid bare, in part, by the political will of a subset of artists working in and around digital technologies. The problem of the integration of art and technology has never been so complex. And the need for art to be critical of the tools that administer our world has never been more urgent.

The work of artist, critic, and curator Jack Burnham represents one of the boldest attempts to explore such a crisis in the 20th century.

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Active at the height of modern art's influence in the United States, Burnham's interest in emerging technology of the time, specifically cybernetics, and what he called "real time systems," inspired a body of work that urged artists to join up with engineers, whose work was key for him in understanding the new information economy and the new relations it produced. Even as outlets for personal expression such as digital video or Instagram were decades away, Burnham was imagining the future of art as one of "systems aesthetics" in which the art object fades into the background and data emerges as a new medium. His most intriguing prediction comes in an essay entitled *Real Time Systems* (1969). Artists, he proposes, will begin to leave behind the suspended time of art and join the software engineer as a designer of a system that uses the most efficient means of propagation of information. "What a few artists are beginning to give the public is real time information, information with no hardware value, but with software significance for effecting awareness of events in the present."[2] Burnham counseled artists to revolt against their humanist prejudices and start to conceive of art as data, art as software. "As long as museums refuse to acknowledge this

transformation [from specific objects to real time systems],” Burnham warned, “they will remain in a peripheral and potentially obsolete role in relation to most advanced aspects of contemporary art.”[3]

Burnham’s evangelism for art and technology collaboration landed him at the center of the so called “art and technology” movement. Historians mark its beginning with a group known as Experiments in Art and Technology (E.A.T.). E.A.T. got its start when Robert Rauschenberg and Bell Labs engineer Billy Klüver conceived of the performance series *9 Evenings: Theatre and Engineering*, held in October 1966 at the 69th Regiment Armory in New York City. Known as the first major collaborative project among artists and engineers, it featured a range of technologically enabled performances. For *Open Score*, Robert Rauschenberg hooked up tennis rackets to an FM radio and the armory’s lighting system. Each time the ball was hit it turned off one of a series of floodlights hung in the drill hall. Frank Stella and his partner played a match in front of the crowd watching from bleachers, slowly plunging the entire hall into darkness.

In 1970, Burnham would continue his

advocacy for melding art and technology by curating *Software—Information Technology: Its New Meaning for Art* a major exhibition at the Jewish Museum in New York City. According to Burnham, the show was not simply about exhibiting software's aesthetic potential, but instead "demonstrates the effects of contemporary control and communication techniques in the hands of artists." The exhibition's emphasis on equipping artists with digital tools was an argument for the role they would play in making the future. The subtler ideology embedded in this model of arts and technology partnership was that the engineer augmented the artist. This arrangement became something of the de facto model for a generation of artists who looked to integrate technology into their visions. But it was sorely lacking in a criticality of what dangers might be lurking underneath the newfound expressive powers.

Twenty-one years later, Burnham saw things differently. In *Art and Technology: The Panacea that Failed* (1980), Burnham looked back at the spread of this artist-technologist collaborative model. The results, he observed, "have fared from mediocre to disastrous."[4] Burnham's essay cast dour assessments over

now canonical moments in the 20th century's history of art and technology. In a summary of *9 Evenings*, Burnham quoted the critic Clive Barnes, who described Rauschenberg's *Open Score* as "such a sad failure, such a limp disaster, more like an indiscretion than an offense." Burnham noted how the New York art press's "humanism" was a defense mechanism in a society just beginning to recognize the "disproportionate influence that technology exerts on our cultural values."[5] He was resentful of critics' dismissive attitudes, but acknowledged that, in retrospect, *9 Evenings* and the formation of E.A.T. that followed was unsuccessful. Burnham had similar views of *Cybernetic Serendipity*, an early, large-scale show of "post-machine art" at ICA London in 1968. It featured computationally generated choreography, text, and poems, but was underfunded and poorly planned. When it traveled to the Corcoran Gallery of Art, it was so badly installed that curator Jasia Reichardt publicly disowned it.[6] Finally, Maurice Tuchman's Art and Technology Program at LACMA, in which the museum recruited 37 corporations to pair their resources with artists (Richard Serra, for example, was matched with Kaiser Steel), was also assessed negatively. The program, which

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ran from 1968 to 1971, resulted in 16 collaboratively produced objects for exhibition. Burnham, again, acknowledged that the art critics who initially panned the program were in some sense correct. Historian Tina Rivers Ryans best summarized the widespread critical condemnation the projects received at the time: "It was argued that they had low aesthetic value, did not emerge from any meaningful collaboration, and were plagued by technical malfunction."[7] These barbs were perhaps to be expected, but as Rivers Ryan also reminds us, the early art and technology movement, specifically Tuchman's Art and Technology Program, was perceived as being complicit with the military-industrial complex.

While Burnham was prescient about the impending influence of the software engineer, his skeptical view of those so-called "humanist" prejudices would prove to be foolhardy. Unlike today's Silicon Valley cheerleaders, Burnham wasn't techno-utopian, but he was unequivocally techno-determinist. Burnham and the period he commented on incubated a model that encouraged artists to employ software as some kind of radically new epistemic-aesthetic paradigm. And yet his words about the future of

art and technology did indicate an awareness of the capacity for software to be abused on a massive scale. "With increasing aggressiveness," he asserted in a particularly prophetic statement, "one of the artist's functions, I believe, is to specify how technology uses us."[8] Looking back on the initial period of art and technology collaborations reveals several problems with the period's history. The early art and technology movement placed "technology" as somehow separate—and in many cases above—the power of the artist. The artist would be augmented by new tools but never able to critique them. The model for an art and technology partnership, then, began with hagiography, celebration, and a teleological concern for the undiscovered progress that technology might afford the pre-digital artist.

Second, an entire swath of artistic production was left out, one with a different focus on the human interface of technology's creeping dominance. Lynn Hershman Leeson began working with new media, artificial intelligence, and computer-based work as early as the 1960s. Key works from that era provide an alternative model for artists' engagement with emerging technologies—one that serves as a bridge to

the newfound vigilance around the threats of technology run amok. *The Complete Electronic Diaries* (1984 – 1996) is a series of videos re-

Installation view: Lynn Hershman Leeson, *The Electronic Diaries*, 2019, in *Manual Override* at The Shed, New York, November 13, 2019 – January 12, 2020. Photo: Dan Bradica.

corded by Hershman Leeson over the course of more than thirty years. In these films, she explores ideas and experimentation with new media, epigenetic trauma, and emerging bio-technology. She speaks to a camcorder, often straight away, captured in a starkly confessional format. The topics range from her early child-hood, her struggles with eating disorders, and a cancer diagnosis. The moving portrait reads something like recordings of therapy sessions, albeit interspersed with dramatic interludes

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and documentary-like editing techniques. The viewer is drawn in not just to the unfolding of a human narrative but to the technical mediation employed to create the narrative. Working an entire generation before the normalization of such digitized confessional documentation—the likes of which we see everyday on Snapchat, Instagram, and TikTok—Hershman Leeson projects her consciousness onto the screen.

In an early entry from 1984, Hershman Leeson invokes our collective, contested relationship to encroaching new media:

> I think we've become a society of screens. Of different layers that keep us from knowing the truth as if the truth is almost unbearable and too much for us to deal with...We've become comfortable with a kind of distortion...sort of a distortion of our sense of truth and value...

About halfway through the multi-decade project, she confesses that the intensive documentation has changed her relationship with reality, saying, "Now I don't believe that anything is true, unless it's been mediated through a camera of some sort, or a computer."

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After the birth of a grandchild, she reflects further on the project: "For more than 14 years I've been recording images of myself, constantly, almost as evidence that I existed. As if I need to have this captured record in order to survive." If Burnham's writings focused on the potential of emerging technologies, Hershman Leeson focused on their limits. Unlike Burnham, Hershman Leeson did not desire to augment and sustain some mythic role of the artist in society *via* technology, but instead, to use art to show the impact of new media, networks, and the ever increasing integration of machine and body. She used her art to meditate critically on the unintended side effects of collapsing the "virtual and the real."

As time passes in the *Diaries*, Hershman Leeson becomes interested in emerging concepts in artificial intelligence and biotechnology, or what she called our "cyborg future," and the videos begin to show Hershman Leeson becoming anxious with the notion of technological obsolescence. In 1997, she ceased filming. She resumed 22 years later, adding a chapter in which she researches breakthroughs in genetic programming, namely the ability to "print" and thus store information in DNA. The *Diaries*'

final chapters document the process by which Hershman Leeson partners with geneticists to translate the film's contents into genetic code.

After a generation of technological advancement, Hershman Leeson's voice is regarded as prescient, specifically given our newly urgent concerns about the alarming power of digital technology in society. Much of this hinges on Hershman Leeson's ability to predict that datafication of the body (and the surveillance that it implies) would end up being more central and menacing than techno-positivists anticipated. Hershman Leeson rarely focuses on the scale or the expanse of digital technologies, but instead uses her art to show how they bear witness to what is immutably human. In the *Diaries*, we see this play out as Hershman Leeson explores her trauma, her psychological vulnerabilities. It is not difficult to draw the connection between these vulnerabilities and our own. But with each new advancement in technology they become newly encoded, sometimes into our own DNA.

A more recent work by Hershman Lesson, *Room #8* (2018), is an ambitious collaboration in which the artist worked with the pharmaceutical company Novartis to produce two custom anitbodies—the proteins our immune system

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makes to combat invading toxins. The structure of the antibody's amino acids spell the letters LYNNHERSHMAN. The scientists that helped

Lynn Hershman Leeson holding the LYNNHERSHMAN Antibody, 2018. Photo: Novartis and Laurids Jensen. Courtesy the artist; Novartis Pharma AG; Bridget Donahue Gallery, New York City; and Anglim Gilbert Gallery, San Francisco.

Hershman Leeson develop the protein ran additional tests on the antibody and found that it was an "an active, strong, and unusually responsive antibody with a highly bonding nature."[9] This model of collaboration contrasts with other

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models in the history of art and technology in a crucial way. While it uses private, corporate assets to achieve a collaborative end, the artist maintains the primary agency throughout the entirety of production. As Hershman Leeson reasons, going back to the most human of media—literally imprinting her own antibody—is one of the only remaining means to control the privacy of our most intimate data.

Some 60 years after the early experimentations with art and digital technology, we find ourselves at a new juncture with new challenges. The cybernetic utopia envisioned by the early art and technology movement is no longer a futurist dream. Instead our platform-mediated society already feels dystopian. Predictive policing reproduces racial bias at scale, private corporations use opaque systems to track and monetize our personal information with every move, and large swaths of the workforce are made redundant through rapid disruption of traditional institutions, dramatically increasing income inequality. Millions of tons of rare metals are mined from the earth to make consumer electronics, only to be discarded in landfills a few years later, all while the planet heats up and wildfires uncontrollably burn. The question of

how artists might engage with emerging technology has become more urgent.

In the time that has passed since that first experimentation, we have witnessed the collapse of two central myths. First, the techno-determinist myth that art's future lay in the abandonment of inert art objects in favor of active integration of the technologist's tools. As digital tools have grown to dominate everyday life, the more we have come to seek the detached musings of contemporary art. In a time when techno-capital wants to accelerate past the human, artists stubbornly appeal to that which cannot be automated—our human connection to the art object, the very fabric of the aesthetic impulse that remains fleshy, unstructured, and impervious to computational imitation.

Second, and perhaps more relevant of late, is the collapse of the myth that Silicon Valley might operate as a societal vanguard, assuming the position, once granted to artists, of dictating our imaginative horizons. In this techno-utopian microclimate, peaking perhaps around 2014, curators were swept up in the narrative that contemporary artists were returning to collaborative models using software, artificial intelligence, and social media platforms. Present-day

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curators of the digital persuasion have attempted to resurrect the model of public-private art and tech collaborations from the early art and technology exhibitions despite their glitches, lack of imagination, and poor critical reception. Many, if not all, of these arts and technology projects positively cite E.A.T. or the Art and Technology Program as precedents. The fact that such institutional efforts coincided with a period in which Silicon Valley giants made massive public relations pushes to inculcate their consumer products to the masses is perhaps work for other historians. If 1960s initiatives like the Art and Technology Program were faulted for blurring the lines between art and the military-industrial complex, contemporary revivals of the intersection of art and tech have earned similar skepticism for the way that they have normalized a cozy relationship amongst artists, private surveillance platforms, and venture capital investments. Along the way, they uncritically perpetuated the popular belief that the internet democratized culture, and in doing so joined Silicon Valley thinkers in their unchecked enthusiasm for all things digital.

Out of the ashes of the Silicon Valley myth, we are witnessing the birth of a new practice—

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one that has emerged alongside the backlash against digital platform capitalist monopolies that have consolidated in the past decade. In these emerging practices, artists utilize technology to express their doubts. Crucially, artists have come to adopt such technical toolkits not for the facile purpose of toying with technology's aesthetic possibilities, or projecting a fictive cyber-alternative that we now know does not exist, but out of sheer practicality and desire for critical impact.

It's a fine line to walk, though, between making art with technology and making art that critiques the technology that is part of its making. When asked about the rise of radical digital art that attempted to critique systems of surveillance through critical mimesis, theorist Benjamin Bratton warned of a common pitfall:

> 'Critical' works that are content to pull back the curtain and demonstrate before a public the truth of surveillance mechanisms, demonstrating it, bearing-witness and staging encounters are, in some ways, not so much challenging the principle epistemology of panopticism than they are fetishizing it, repeating it in miniature.[10]

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The task of the techno-critical artist now is to balance a resistance to the subject's infrastructure and artist's complicity within it. Only the most careful and thoughtful artists manage this balance. They are cognizant not just of the rapid, monopolistic rise of platforms, but also their unmasking as irresponsible meta-organs of networked surveillance and extraction. A new art-tech partnership model emerges. This new model combines art's contemplative mode with digital technology's ability to open a novel space for technology criticism. Martine Syms's *Shame Space* (2019), in which the artist programmed an artificially intelligent SMS chatbot, provides an example of this model. When viewers first approach the installation, it appears as a room-sized enclosure with four screens. The screens contain a phone number that, when texted, initiates an SMS conversation on the viewer's phone, the contents of which are powered by a computer program. Underneath the installation's hood, we see the program's logic tree displayed on two laptops. But as the conversation proceeds, Syms's bot (nicknamed *Mythiccbeing)* takes on a life of its own. The participant's SMS chat unfolds into an encounter that is both menacing and hilarious.

"We should stop being assholes to each other and have sex more often."
"Ok"
"I feel like 'they' want me to be doing something but what?"

Anyone working with artificial intelligence technologies fears the sometimes manic outcome displayed by *Mythiccbeing*. *Shame Space* represents a shift in the power dynamic of the once utopian art and technology partnership. Now the tables have turned. Engineers immersed in the daily consequences of their products now look to artists for critical interpretations of the powers of their crafts. The techno-critical artist never takes the technical specificities of a tool at face value. They work with the tools, but make them weird. Techno-critical artists collaborate with technologists not just to leave behind their decrepit and obsolete tools, but to partner with operators of technology who are increasingly concerned about the house they have built. The artist can be critical of technology, while at the same time understanding its utility in demonstrating what is at stake. Each artwork at this crowded intersection marks a potential, if incomplete, answer. Each work

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reminds us that art is not powerless against the tools of platform capitalist monopoly. In short, each work can escape the pitfall of merely fetishizing the "code," and instead provide a de-instrumentalized expression through which we might investigate the ethics of software, even as we indulge the technical capacities of its infrastructures.

We should, however, remain realistic about the goals of such a critique, and measured in our expectations for its impact. Art that is critical of technology, to date, has been trapped in a conundrum: often it arrives either too early to register as polemic, or too late to reverse the entrenchment of its subject in our lives. But the sum of this new regime of techno-critical practice provides evidence of how we might engage with technology in our own lives. Critics can reinvigorate their role alongside the new model of techno-critical artist, helping the audience add structure, meaning, and ultimately the much-needed political context for this new school of institutional critique. The critic must not be seduced by the narratives embedded in so many media that dictate our relationship to technology, but rather treat these narratives and artworks as texts in the unfolding saga of how technology uses us.

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1   Lewis Mumford, *Art and Technics (Bampton Lectures in America)* (United Kingdom: Columbia University Press, 2000), 59.

2   Jack Burnham, "Real Time Systems" in *Dissolve Into Comprehension, Writings and Interviews, 1964 - 2004*, ed. Melissa Ragain (Cambridge, MA: MIT Press, 2015), 130.

3   Ibid. 131

4   Jack Burnham, "Art and Technology: The Panacea that Failed" in *The Myths of Information: Technology and Postindustrial Culture*, ed. Kathleen Woodward (Madison, WI: Coda Press, 1980), 1, https://monoskop.org/images/4/4e/Burnham_Jack_1980_Art_and_Technology_The_Panacea_That_Failed.pdf.

5   Ibid.

6   Ibid.

7   Tina Rivers Ryan, "Blown Circuits: Technology and Irrationality in Postwar Art" in *Delirious: Art at the Limits of Reason, 1950 - 1980*, exh. cat. (New York: The Metropolitan Museum of Art / Yale University Press, 2017), 87

8   Burnham, "Real Time Systems," 137.

9   "Room #8," Manual Override, The Shed, accessed December 10, 2019, https://theshed.org/program/63-manual-override.

10   Benjamin Bratton in "Machine Vision: Benjamin Bratton in Conversation with Mike Pepi and Marvin Jordan," The Data Issue, *Dis Magazine*, February 2015, http://dismagazine.com/blog/73272/benjamin-bratton-machine-vision/.