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Looking at Nothing, Bigly: The Right-Wing Politics of Texture Mapping Earth

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ABSTRACT

Are render engines fascist? This article proposes a debate on the relationship between conservative and far-right politics and environmental visualization technologies. The argument works through a close reading of a patented texture mapping process owned by Google Earth and a related artistic project titled *Postcards from Google Earth* (2010-ongoing) by Clement Valla. These case studies surface the engineering choices that selectively edit and optimize what is seen by users, thus creating a very particular, and manipulable, framing of "environment." On this basis the article makes two claims: one, that computer graphics play a part in the conservative, right, and far-right mobilizations of nature-as-metaphor that nourish fascist and populist imaginaries, and two, that computer graphics more broadly reshapes human visual culture in ways that amplify the central contradictions of liberalism that have historically been exploited by fascism, such as an anti-allegiance to fact and rationality. The article concludes that combining digital technologies with representations of environments can resurrect latent conservative politics of the environment, and furthermore, that these politics can be directly and critically assessed through canonical interrogations of landscape art.

INTRODUCTION

The title for this article was going to be "Are render engines fascist?" A provocative title for sure, but it wasn't without some consideration. For one, I hoped that the boldness of such a question might shock readers into loosening their alliances with some of the normalizations we've afforded to tech and its impending creep into private life. Secondly, a special issue on media and environment seemed to lend itself to the topic given how often and how many kinds of environments are generated using computer graphics, whether for video games or wayfinding software.

Yet as a matter of constructing a logical and supported argument, charging render engines with being fascist in the space of this article wouldn't be possible. For one, a definitive definition of fascism is a task that outruns our purpose here. Jack Z. Bratich has called fascism an "elusive and contested term" and our scholarly attempts to grapple with it "sprawling, complex, and multidisciplinary."[1] Bratich also draws our attention to Andreas Huyssen's assertion that in our

contemporary moment fascism is a concept "both obsolete and up-to-date."[2] This summarizes a present dimension of the confusion. Much of the literature on fascism tends to break off after WWII and refocuses onto studies of populism. Despite populism emerging in the 19th century (and thus predating fascism) it is often treated as a subset of fascism.[3] Yet, the distinctions between fascism, populism, and the practices of each has reemerged as a subject of interest in light of the global rise in what has been described as *authoritarian populists*—a category that includes Trump in the US, "Bolsonaro in Brazil, Duterte in the Philippines, Putin in Russia, Modi in India, [and] Xi in China."[4]

A 2021 podcast episode of *Know Your Enemy* both summarized and embodied this confusion by debating the question of whether Trump was fascist.[5] The nearly two-hour podcast episode produced a range of possible criteria and proposed solutions, only to ultimately (and persuasively) arrive at the conclusion that perhaps the question itself—whether Trump is fascist—was the wrong one altogether. This conclusion tracks with what Nadia Urbinati, following Chantal Mouffe, has argued, stating that populism is an ambiguous term because it is not a "specific programmatic content" but rather "a form of collective action aiming to take power."[6] Aside from what we might interpret as the relative futility of labeling a figure like Trump as *fascist* or *populist* in a moment of serial crises, there may actually be no way of deciding between the two classifications because, in figures like Trump or Modi, the presentation more often appears *as both.*

Ambiguities in the literature on fascism, authoritarianism, and populism compounded my own hesitancies about my original inquiry. What would be accomplished by declaring this small part of computer graphics technology fascist? What new thing would we learn, and what value would it have? Having now written the article (and coming back to it for edits), I'm no longer convinced this wasn't a reasonable question to ask. For one, explicitly linking tech with fascism acknowledges both the current global rise of right-wing authoritarianism and the role that tech has played in that. More importantly, though, I *did* find a link between render engines and many of the themes consistent across fascism, authoritarianism, and populism, many of which cohered in intersections with ideas of nature.

As this article will show, conservative, right, and far-right ideologies gain a ready-made rhetoric in their creation of "nature" as both an image and a metaphor. Ideas of a "pastoral nature" as symbolically patriotic and morally good are easily mobilized against images and associations with the city, industrialization (or perhaps in a more up-to-date vein, *technologization),* and globalization. This contrast in imagery and ideals lends itself to the forms of affective and intuitive logic conservatives need to mass-mobilize. Aligning nature and the natural with "the good" helps identify what, and who, are "bad," establishing easily identifiable "others" that nourish the fascist and populist imaginaries. Visualization technologies and digital re-presentations of this imagery only deepen these associations and proliferate their ideas. By recreating "nature" on the space of a computer screen or video game, conservatives have a unique and unprecedented control over the image of nature. They can create the precise view they'd like people to see, with very little pushback—if any.

To better explain this phenomenon, I've chosen to work with a particular technique of texture mapping known as the *Asynchronous Multilevel Texture Pipeline* (AMTP). The AMTP was first brought to my attention (and perhaps yours) via Clement Valla's viral art project *Postcards from Google Earth* (2010-ongoing), and his excellent follow up article for Rhizome *The Universal Texture* (2012). The project documents zany moments in Google Earth where the platform appears to be glitching but is not. Valla's investigations make the case for the significant ways that digital

technologies have transformed our visual world, and just how far we collectively must go to integrate these changes epistemologically. This lesson bears out the stakes for thinking about the ongoing cooperation between technology, capital, and conservative and right-wing projects.

The article provides an overview of the history and engineering choices of the AMTP, information which is taken both from the AMTP's patent and my interview with the AMTP inventor Chris Tanner. My interview with Tanner reaffirms the military history of computer graphics technologies that has long been documented and specifically outlines the connections to the AMTP and texture mapping. I situate Tanner's working experience in a broader political context of the U.S. in the 1990s. Despite having a Democratic president for the first half of the decade we can still identify a trend towards conservative values and projects. The development of the AMTP both plays a part in, and expresses, this political context.

While texture mapping technologies can be applied in many ways, the AMTP's use as part of a "mapping" tool is noteworthy. As will be explained, the AMTP's recruitment and construction of environmental imagery reflects the ways that technology and ideology can converge with a kernel of conservatism that is at the core of ideas of *nature*. Here I will argue that those ideas of nature and environment are better understood as ideas of *landscape,* an aesthetic and idealized version of *place*. Landscape purports itself to be a kind of nothingness while in reality landscape is laden with "some of the deepest core values of the culture that created and idealized it."[7] Thus, the move to reframe the discussion of the AMTP software as a producer of *landscape* reveals how the AMTP's creation of environments makes conservative power's *fantasy* of total control over rationality and epistemology *a reality*. Such a condition leverages the already-existing colonial foundations of digital technologies. On this final point, the article addresses the role of race and difference in epistemology and computational "sight." I show how the AMTP taps into a misguided belief in the machine's capacity to "see." Instead of "seeing," what the AMTP does is continue in the institutionalization of racial bias.

One quick note on terminology before proceeding. The analyses performed on the AMTP and technology more broadly are not made using a coherent or sustained definition of "right-wing," "radical right-wing," or even "fascist" politics. Given the degree to which these politics form a spectrum of projects and belief systems, I have instead chosen to read technological moments in terms of their performance and how these performances align with a certain political orientation. In other words, there is no one political system or definition that I carry throughout or apply to these works. This choice risks losing a certain cohesion in the argument. However, I still feel it is an important analytical choice for two reasons. One, this article pushes for an understanding of digital technology beyond *technē*. Foundational to the approach taken here to the relationship between politics and digital technologies is the belief that digital technologies cohere the DNA of a kind of rationality and epistemology that scholarship is still working to define.[8] Secondly, resisting any one definition of conservative politics acknowledges the emerging forms of radical conservative and right-wing projects that queer, queer of color, and indigenous scholars have been at the forefront of investigating. In their assessments, neoliberalism (now widely accepted as "synonymous with mainstream conservatism"[9]) is understood as a more political than economic project. By extension, social control becomes a more expansive technique of capital, and social difference is critical to success. Relatedly, this choice also acknowledges the recent ways that right-wing politics have spontaneously organized both through internet cultures and by making use of

Web 2.0, seen in formations such as the alt-right. Politicians may be motivated by economic incentives but what they share with their followers is a lust for the affective (and *effective*) rhetoric and reasoning that social difference and control uniquely optimizes.

Postcards from Google Earth and the Universal Texture

Sometime in the year 2012, I, like many others, came across Clement Valla's photographic project *Postcards from Google Earth*. The project went viral for its incredible images, taken from Google Earth, of what seemed to be another world. *Yes*, this world looked like ours, with blue bodies of water and the gridded hallmarks of post-industrial cities, but something else was afoot. Roads seemed to dip suddenly, in law-defying ways, or they unfurled like spools of ribbon, slightly hovering over the ground. Either way these glitched images defied the laws of gravity in uniquely aesthetic ways. And what was more surprising, as we would come to learn, is that the images were not, in fact, glitched. The images showed moments that were, as Valla explained, "the absolute logical result of the system. [The images] are an edge condition—an anomaly within the system, a nonstandard, an outlier, even, but not an error."[10]

As Valla would come to discover, this "nonstandard" effect was the result of a misalignment in a particular way that Google Earth operates.[11] Google Earth draws on a computer graphics function called *texture mapping*, also used by video games or other cloud-based virtual worlds. Texture mapping involves applying an image, or "texture," to a 3D model. This gives the impression that there is visual depth in our computer screens. Textures have very little depth of field—like a scan, as opposed to a photograph—and are meant to give an impression of the surface of an object. Models are like clay forms, but on your computer; devoid of color, they are the lumpy mass of the objects we see and interact with on our screens. When textures are applied to models, it is like putting a label on a bottle; when done correctly, texture mapping can make models with even the least amount of sculpting look textured, voluminous, and highly realistic. Texture mapping can be a complex execution, so it tends to recruit a lot of resources from its hardware. This can result in lags and delays that interrupt the experience of gameplay and the effortless feeling of moving through a world. The problem only gets worse as textures become "larger"—as in, they become more detailed and contain more data.

For Google Earth, solving the issue of how to texture map, in real time, using large-scale textures to give the impression that one was effortlessly and seamlessly flying over the Earth was crucial to the product's success. The source of the textures that Google Earth uses are satellite images, at times taken at a resolution of one meter per pixel, and at other times taken at a resolution of forty meters per pixel. This variation in texture resolution, in combination with the project of requiring satellite images of the entire surface of the globe, and at various levels of detail (for zoom in/out effects), means huge textures and load time.

To solve the problem of texture mapping such large textures at an appropriate rate, Google Earth uses a patented texture mapping process commonly referred to as the *Universal Texture*.[12] What's important to know about the Universal Texture on the user side is that it stitches textures to 3D models in a way that is unique to the Google Earth service, which allows for an unprecedented user experience at better levels of efficiency. Users can have their God-like view of the Earth because the Universal Texture is able to effectively balance computational load time while consistently hitting an upper limit of realism in its imagery. Google does this by optimizing two aspects of the

texture mapping process. One, a more selective approach to saving textures called *clipmapping*, and two, an economically resourceful method for retrieving and rendering textures in real time that relies on a novel method for administering the responsibility of memory and storage. This efficiency in modeling gives the (false) appearance that Google Earth works off one giant, endless texture available for users' view alone—hence the name, *universal.*

The Universal Texture's patented technology is technically called the Asynchronous Multilevel Texture Pipeline (AMTP), invented by Christopher Tanner. I spoke with Tanner about the history of the AMTP, how it came about, and how his time working at Silicon Graphics Inc. (SGI) influenced the AMTP. In the 90's, SGI was working on cutting-edge projects at the forefront of computation for contractors with bottomless pockets like the U.S. Army and Disney. The catalyst for working on what would eventually become the AMTP came out of this high-stakes, high reward, highly competitive environment.

Tanner and his team were working on flight simulators at SGI when his boss attended a trade show where he saw a flight simulator by Evans & Sutherland "where you can fly over and it's all real imagery."[13] Tanner's boss came to him saying, "These guys have this flight simulator where you can fly over and it's all real imagery . . . I want you to go figure out how to do that. How can we do something like that? I have no idea how they did it." And with that, Tanner remembers, "We sat there brainstorming for a half an hour, and then he left."

Figuring out how to achieve this real-life, fly-over technology would become Tanner's life's work for the next few years. The "real imagery" that Tanner's boss was so taken with was a departure from the current practice of texture mapping at the time which included using generic (as Tanner describes it) or stock photos of a house, for example, to map onto polygons. These crude stand-ins for an environment worked to give the illusion of moving through a space but one which was limited. They also could not create the experience of moving through a specific space. What Tanner's boss saw at Evans & Sutherland, and what Tanner and his colleagues eventually figured out, is that the experience Evans & Sutherland were creating didn't restrict users to moving through a set space. Instead, the imagery Evans & Sutherland was using was being stitched together *as* users of the flight simulator flew overhead.

With this discovery, Tanner both got more information and more problems to solve. One was how to avoid "seams" at the borders of where one texture stopped, and another began. This was also particularly tricky because of a basic property of texture mapping that brings together two opposing entities in a cohesive unit. A second challenge was wrapping a spherical polygon with rectangular images of the Earth, and at different resolutions and fields of distance. "You can't store the whole [texture] at a high resolution, so what happens is every time you have to switch resolutions, there's a hard seam. In the images, you can actually see all of these little patches. It looks like a little quilt," Tanner explained. A third challenge for Tanner was that even if he could solve these aesthetic issues, there remained the problem of "the architectures of the hardware itself." The problem that the AMTP would need to solve was, in part, about how to move a large volume of data through extremely limited computer systems.

There was one final challenge for Tanner in creating the AMTP, and it was something he wasn't quite expecting. While working, Tanner discovered that his moving data problem wasn't going to

be solely limited to hardware limitations but to something else, something potentially more challenging. Tanner also needed to consider human vision. He explained that the issue was not what users were seeing, but how users see *tout court*. Tanner tells the story:

> All this stuff . . . mapped back to the visual perception. What are you doing? What are you seeing as a human being? Lots of interesting experiments that we had heard about as we were doing all this stuff, that they used to torture all of the . . . Air Force guys in these flight simulators. Ninety-nine guys would throw up and they still made the hundredth guy get in and throw up.
>
> It turns out that our eyes . . . our periphery vision [sic] has an incredible sensitivity to movement. What happens is, when you change the way that something looks—even though it's insignificant—in your periphery vision, your eye goes there. These guys couldn't stop looking around because all of this stuff was changing as they were flying through it. It was freaking them out because they would look . . . and then the computer would draw it correctly. It would be like nothing's changed, and then they would look away and all this stuff would really freak them out.

Seen from Tanner's perspective, the lack of peripheral vision wasn't just a computational solution but also an act of mercy. Given the sensitivity of human peripheral vision and its nauseating impact, cutting out the outer fringes of a texture's visible field to save computational load was a no-brainer. The AMTP also contains a second solution to the problem of the sensitive peripheral vision. To avoid the "freak out" when users would look away and then have the computer (appropriately) redraw their view, the AMTP links the motion of looking to point of view. This is dealt with through toroidal roaming, wherein "an arbitrary rectangle, or other bounding shape, specifies the textures in the tile cache to page into the texture cache. The rectangle moves as the region of interest changes."[14] Whatever imagery or place falls outside the region of interest is deleted.

In the end, the crux of the AMTP's success was a solution that married the issues of hardware resources and nausea. The AMTP works by clipping the corners of stored textures, effectively reducing the size of textures but in nonsignificant ways. What is ultimately paged in the pipeline is a precise designation of what a user wants to see. It is analogous to looking through binoculars where you see what you want to see "better," but the cost is that you cannot look out of your peripheral vision. The AMTP also works by storing only the information that it deems necessary. It trades comprehensiveness for optimization, quality for volume. It is an extraordinarily clever piece of engineering for the mathematical and economic problems that it solves.

POLITICS IN THE WORKPLACE

The fact of SGI's and competitors' contracts with the Department of Defense is a direct connection to the historical, material, and structural connections of U.S. militarism. That said, the alignment with military history in and of itself cannot be collapsed with conservative politics (there are, after all, many examples of a militarized leftism). And in fact, 1993 (the year *Jurassic Park* was released, for which SGI was responsible for the animations) was the year Democrat Bill Clinton took office from his predecessor, George H. W. Bush (Republican). However, it can also be observed that Clinton's administration oversaw a significant shift of the U.S. Democratic Party to the right, with

President Clinton famously announcing during his second term "the era of big government is over," and his administration driving debilitating cuts to social welfare programs. Clinton was also the first president to assume office following the end of the Cold War, a backdrop and context for so much of the historical shift in the militarization and development of technology.

Chris Butler explains that we are able to understand neoliberalism as the "dominant political rationality" by taking on Michel Foucault's observation of the production of new subjectivities which "extend the logic of the market across society."[15] SGI, while described fondly as a group of post-college friends, was a setting for social relations determined by and through the alliance between the tech industry and U.S. military that is today very commonplace, but which was still in its nascency then. While SGI was seen to be trafficking in a kind of "market freedom" that neoliberalism in the most positive readings purports to endow (pursuing projects of any type, so long as budgets fit), it was doing so by exploiting the hypocrisies of liberalism and democracy. Individuals could follow their dreams, ascend ranks unfettered, and be rewarded in amounts only limited by their need for sleep.

In fact, this is almost verbatim described in Tanner's experiences. Along with the long working hours, intense camaraderie, personal ambitions, and competition, big budgets furnished both exciting projects and big expectations for results. Tanner recalls that while he was developing the AMTP "there was a billion dollars of hardware that was on back order, waiting for my algorithm to work on the new hardware for clipmapping." "I started working in different places," he told me, "because I started getting calls every three hours about whether it was working or not, for like three months, seven days a week, and, *Hey, can I help you? What do you need?*" Tanner goes on:

> I had this woman who, at that time was my manager, in theory, used to be my peer. She was somebody who never slept more than two and a half hours [. . .]. It was not helpful. There was a lot going on that, because all these people were building all of this hardware, to be able to go to the next generation of simulators, and they wanted this new feature that we were working on.

The intensity of the work pace and environment took its toll. Tanner tells me of how a local newspaper came to SGI once on a Saturday because "They knew that the people at Silicon Graphics worked so hard, and so they stopped by one of the labs at 2:00 in the morning. There were still like 25 of us there working." The reporters went in and interviewed some of the SGI employees, including Tanner. Tanner's first debut appearance in the local Silicon Valley newspaper read: "Christopher Tanner, a tired, ruined looking young man . . . " Tanner was just twenty-four.

In this anecdote alone we see how the alleged rewards of the SGI workplace environment work as a coverup for what is little more than the extreme Capitalist abstraction of labor from able bodies. A workday, well-extended past regulated hours, is worn as a badge of distinction instead of the affront it should be, harkening back to Butler's interpretation of Wendy Brown as situating neoliberalism as a political rationality which always, and ultimately, "undermines the possibility of democracy as a political project"—despite the freedoms it brandishes.[16]

Butler has argued that events since the early 1980s have proven that neoliberalism is not primarily interested in limiting state power (though that is certainly still a feature of its agenda). Instead,

neoliberalism is primarily concerned with "reshaping of state power to engineer particular social outcomes."[17] It is reasonable to see little coincidence that the starting point of the early 1980s in Butler's assessment fits with SGI's activities in the 90's, and the broader context of the U.S.'s move towards the advanced forms of neoliberalism (understood as slightly more political than economic, and more authoritarian) under investigation today.

During the time that clipmapping was being developed at SGI and under the Clinton administration, many of the qualities that we in present-day characterize not simply as neoliberalism, but as *authoritarian* neoliberalism, were taking form. For example, some 40 years into the so-called "war on drugs" initiated by Richard Nixon, in 1998 Bill Clinton blocked federal funding for clean needle programs against the recommendation of his health secretary.[18] Despite evidence even then of an emerging opioid crisis, Clinton's approach embodies what has now been identified as an extreme appeal to individual rights that characterizes part of the morphology of neoliberal authoritarianism and the radical right.[19] Jodi Melamed has described this phenomena as a "proliferation of rights-based capitalist violence" that was intensified under the Trump administration.[20] In this schema, radical right appropriations of liberal rights are pushed to their limitless extreme and serve, in part, to insulate individuals from any obligations outside themselves. One expression of this which we can see in Clinton's blocked funding is the logic that individual rights should be extended to "protect 'the taxpayer' from being forced to pay for the government to provide services to other people."[21]

This perspective embellishes how neoliberalism as a dominant political rationale influences and recruits from techniques of social difference and racialization. Melamed has argued that this particular configuration of the Right is the result of a "combined pressure of the ultracapitalist radical Right, a block that leads today for extractive, financial, and corporate global capitalism, and the political resurgence of a libertarian leaning ethno-nationalism."[22] The remaking of rights from within this convergence of forces serves to institutionalize the "generalizable" cultural value of "the 'right' to be unencumbered by concern for the well-being of others and the planet."[23] In reality this right to be unencumbered is not accessible or applicable to all and is instead, as Melamed notes, a "lightly veiled version of white supremacy."[24] This kind of social sorting and selective favoring reflects both the success of the kinds of engineered outcomes Butler has told us neoliberalism aims for, but also evinces the racial dimensions of right-wing ideologies that are specifically enabled through a grammar of nature and naturalizing discourses.

This political context should inform any assumptions we make about not only the cultural ethos and culture at SGI during this time, but also its products, right down to its engineering choices. One line of thinking that has been taken up across cultural studies of digital technologies puts forward the idea that digital products and objects reflect to us the values and cultures in which they are conceived and designed. Such cultures extend beyond acute times and places; they transcend farther back in history than Google, Alphabet, or Meta, and exceed the knowledge and capacities of programmers. In other words, hardware, software and code are always in excess of their present moment. And, as James E. Dobson has written, even though technologies change, transform, or are improved upon, "the historicity of these earlier algorithms and methods can be located as a body of accredited knowledge of the prior executions of these algorithms."[25] Not only then do new versions activate old histories and epistemologies of these technologies, but every iteration also serves as a kind of geological layering and institutionalization of these belief systems and temporally-specific, normative assumptions. The past can never be learned from or forgotten—instead, we can only dig our heels in further.

The notion that technology can be infused with the values of a culture in a particular time and place is not limited to workplace culture, hardware, or software. Instead, it also extends to encompass the whole of sociotechnical assemblages. Ezekiel Dixon-Román, for example, has argued for a shift in thinking about the ontology of data and, more profoundly still, of mathematics, against the idea that it might speak as a "language of nature" and thus give voice to a "metaphysical deity."[26] Dixon-Román writes that data is shot through with imbalanced sociopolitical relations and "produced in events, acts, and situations and not based on inherent human characteristics."[27] For this reason, Dixon-Román advocates for understanding data not as a neutral representation of the world but something far more influential: "Data are better understood . . . by . . . how they act, enact, and intra-act with other assemblages."[28] What we can learn from this line of inquiry is that machines are begotten on all sides by the kinds of problems optimistic technosolutionists hope they will solve. Far before machines come to function as our tools, they already carry inside of them all the presumptions, biases, and dysfunction of human society. As Dobson writes of machine vision, whether the connection between a technology is directly or indirectly linked to more nefarious causes like military imperialism and surveillance, they always "nonetheless embed within them normative assumptions about humans and the world."[29]

Such an idea is further compounded by the norms and normalizing role that ideals, images, and discourses have formed around nature. Ideas of nature (and particularly those as antithetical to culture), idealizations of environment, and beliefs around given, or "natural," laws all form ideological fulcrums upon which the Right has been able to maximize ideology and minimize science-backed knowledge. As we will discuss in the following sections, environment—so often synonymous with nature in the conservative imaginary—is a key tool and technique for normalizing one set of beliefs and values over another. Environment functions at every register—materially, conceptually, civically—as a lexicon and a grammar for recursively transmitting and legitimating concepts core to the conservative belief system and agenda. We have already noted that conservative ideas of environment give shape to policy and modes of social engineering that can be seen in policy-concerted efforts to drive towards what scholars note as governance designed to optimize extractivism, autarky, and right-wing formations of ecologism.

CONSERVATISM AND THE OPTIMIZATION OF NATURE

In their review of right-wing ideologies and environment, Jesse Callahan Bryant and Justin Farrell criticize a lack of philosophical depth in the sociological study of conservative thought and nature. Despite valuable contributions, studies most often attend to one of two categories: one, conservatism, approaches to climate change, and anti-regulation, and two, conservatism and anti-science sentiments.[30] Callahan Bryant and Farrell note that while these lines of inquiry do address real issues for environmentalism, they form an incomplete picture of the Right with an outsized focus on anti-regulation and anti-science. What is necessary, the authors argue, is to think more deeply and prismatically about how the Right thinks about nature, allowing for engagements with dimensions such as intergenerationality, finitude, and antiglobalization, among others.[31]

From their proposed method, Callahan Brant and Farrell identify *organicism*—the "sociopolitical theory that views the institutions of society as a living organism, similar to a unified ecosystem with shared cultural and spiritual root"—as one cultural commitment of far-right and conservative

intersections with environment.[32] Organicism describes both a moral and epistemological schema that is deployed to provide social order and structuring. By imagining society as a kind of organism with its institutions serving as the homeostatic guts, organicism also overlaps with fascist and populist patterning of inside(r)/outside(r), us vs. them, reasoning.

The work that SGI was doing invokes the kinds of naturalist metaphors that organicism provides in its sharp delineations of inside/outside. SGI employees did work *for* a U.S. company, *for* U.S. citizens. This "inside-facing" work was responsible for much of U.S. pop culture's most ebullient hits. SGI technology was responsible for morphing Michael Jackson into a black panther at the end of "Black or White" and catapulting *Jurassic Park* into the "biggest grossing movie of all time" in 1994.[33] Inside the SGI workplace was also celebratory. Tanner describes the SGI office as being littered with SGI t-shirts. Tanner ventures that SGI might have been among the first to make corporate logo t-shirts. He reminisces, "The first [t-shirt] I got was, Silicon Graphics: the coolest computer company on the planet, and it had a picture of *Jurassic Park* on it. All of the movies that were made in the nineties were all done with SGI hardware."[34] Tanner has suggested that SGI was the "Google of the 1990s," which implies the kinds of "cool" workplace ethos that we see today in tech cultures offering non-remunerative employee perks like free food and relaxed rules around workplace decorum.

These types of spaces and projects stand in contrast to the flight simulators and defense contracts that SGI was working on at the same time: *outward*-facing technologies presumed to be used *not* on U.S. citizens. While plying U.S. audiences with animated characters and magical inter-species transformations, companies like SGI were also training computers and humans on a kind of militarized vision. The AMTP was born out of the desire to train the body into a perfected, (in)human, aerial-bound fighter. Bodies were recruited for this event on either side—not just the bodies that manned higher pilots, but Tanner and his coworkers, young kids themselves when they first took on this role.[35]

The selective realignment of software and their performances with popular culture for citizens, and away from or seemingly unrelated to military uses, can be read as an exercise in organicism. In one way this realignment serves as a kind of rebranding by distribution of its uses across sectors. Distributing militarization across sectors neutralizes the weaponization of technology and cultivates an indebted consent from employees. Such tactics also help to diffuse or offset an employee's sense of direct engagement with militarization, ethics, and social cohesion, thus distributing accountability across projects.[36] But in another way, realignment is simply a manifestation of the already-infused ideology of inside/outside underlying the logics of these projects: animation for American companies like Disney and Universal; fighter pilots for the U.S. military. One implication is that technology for "inside" is joyous, just for fun, politically unrelated, or neutral. Meanwhile, technology for "outside" is to be used as offensive/defensive. The imagery is one of allergen and invasion. And in this sense, SGI was one of many institutions helping to protect the body politic, an imagined "inside" from an ever-encroaching "outside" (because defensive technology is *for what? against whom?*).

Seeing this realignment for what it is starts to paint a fuller picture of how political ideology comes to infuse into technological apparatuses. Making the claim that the AMTP bears the mark of far-right, or even conservative, ideology because of the time and place of its creation is one-half of the picture. It's not just that the height of SGI's operation took place in a political climate that embodied the covert and contradictory nature of a shifting conservatism under the guise of Liberalism (and

under the administration of a Democratic president). Nor was it solely that SGI in itself functioned as an environment in which conservative ideals could play out. While these are true (and important) conditions of a broader context, these conditions only go so far in the sense that what they ultimately amount to is a commentary on the ways a physical environment, or the fact of being in a certain place in time, can influence inhabitants. There are deeper ways of understanding the environment and its intersections with conservatism and far-right ideology, as Callahan Bryant and Farrell encourage us to explore.

To that end, applying "environment" in its metaphoric sense as an analytic lens onto SGI and the AMTP reveals how environment as a signifier of place is a powerful conductor of the operations of power. A key idea about *environment* is that it often refers to an idea or image of a particular place without indexical reference to that place. As Raymond Williams once remarked, "A working country is hardly ever a landscape."[37] In other words, the environment is a place in theory, but it also a picture, an idea, a set of values, and a feeling. The disconnect between these two states of *environment* is a chasm wherein power is most often lodged. And it is an area most directly addressed not by the literature of sociology or political science, but by the art historical genre of *landscape*.

W.J.T. Mitchell defines landscape as modeling a uniquely perverse form of power that mandates us to look—but to look *at what*? To look *at nothing*. As Mitchell affirms, the call to look at a landscape (*come, look at the view!*) is actually a call to "look at looking itself—to engage in a kind of conscious apperception of space as it unfolds itself in a particular place."[38] Far from a neutral or impotent "nothing," Mitchell draws our attention to the fact that the visual appearance of the "nothing" of landscape is actually *full* of the *invisible* operations of power. To look at nothing is to acknowledge the reality of power's invisible influence and the shortcomings of the human sensorium when faced with the task of "knowing" the world, especially in this way.

We can see this premise at work in the layers of disconnect present within the AMTP and its functioning in Google Earth. The AMTP furnishes Google Earth with a particular capacity—the promise of a God-like view of every place on the entire globe, delivered straight to one's personal computer. Epistemologically, Google Earth functions as a kind of mapping software. Writing in 2012, Valla notes, "Google Earth is essentially a database disguised as a photographic representation."[39] Google Earth documents and archives a database of satellite images which the AMTP then dutifully maps in a timely manner and at corresponding coordinates and levels of detail. It is not so much that Google Earth is "disguised" as a photographic representation; digital technologies cannot dishonestly represent themselves. Rather, while the software does not try to conceal itself as anything other than what it is, it does still offer us another kind of fantasy—the fantasy of an epistemology that is super-human and unbounded by the physical laws of the universe. In our popular culture, we trust and understand Google Earth as presenting the world as it exists. There is no question about that. Yet what Google Earth offers to us—flying over the Earth at rapid speeds—is fantastical. And it's not just a fantastical user experience—this feature is not intended for whimsy. The fantasy pervades every level of experience. As Valla writes, Google Earth is a database, but it is database of possible fictions: "an automated, statistical, incessant, universal representation that selectively chooses its data. (For one, there is no 'night' in Google's version of Earth.)"[40]

Given the disjunction between what Google Earth is and how it is meant to be used, we might see the AMTP's construction of "Earth" as more of a gesture in landscape art. AMTP "paints" a virtual container (or software, or platform, take your choice) with satellite photographs of environments. The virtual container (Google Earth) might not draw viewers in with its "seductive beauty," but it does recreate landscape's promise to offer "retreat to a broader, safer perspective, an aestheticizing distance, a kind of resistance to whatever practical or moral claim the scene might make on us."[41] The AMTP delivers on this latter point not simply in terms of the "aestheticized distance" it creates but also in the ways that, in its origins, it allowed for a safe and comfortable distance from the act of manning a fighter plane and insulation against the haunting possibility of distanced-killing.

The invitation to look at (and through) Google Earth is an invitation to look at the landscape and so to therefore also look at nothing, to look at looking. But as a digital technology and a database, it is also an invitation to look at the ways the acts of looking are concomitant with the formation of a power-knowledge nexus. This is present even in the most basic material of the platform. The call to "look at looking itself" is shot through the history of computer graphics. In his recent book, Jacob Gaboury redefines computer graphics as a field being structured not precisely as a question of "how do we make computers see like humans see?" but instead as a question of "what data do we exclude/include to promote visibility?"[42] Gaboury's reappraisal foregrounds an important but overlooked aspect of how computers construct the world for us. This is not necessarily a metaphysical reimagining of digital logics (though there is some of that, too) as it is played out through the re-presentation of nature imagery. That is to say, it's not that computer graphics or Google Earth are a kind of lie. It's more complicated than that. Google Earth—like computer graphics, like the whole premise of realism in painting[43]—presents and functions *as* a true fiction, a truthful illusion. Google Earth specifically upholds what I have elsewhere explored in other Google Earth discourses as the virtue of the "'appearance of realism'—a claim to truthfulness that is not one-to-one, but something not entirely disconnected from it."[44]

The reality that computer graphics are not designed with revealing the world in mind but instead, with its selective sorting and optimization, reveals one part of the mechanics of technology's entanglements with ideology. This is not a new notion, even while it takes new formation in the AMTP and Google Earth. Wendy Hui Kyong Chun has argued for the ways that software overlaps with ideology on the basis of epistemology, writing that "the knowledge software offers is as obfuscatory as it is revealing."[45] Through a play of the inherent contradictions in transparency, software can both announce itself as the great revealer, the objective arbiter—*a mere database, the container of data*—and simultaneously drive the creation of a world it wishes to impose. It does this in part by self-mythologizing as "common sense."[46] Through the abstraction of software's actual and perceived capacities, software presents as intuitive the transactions that are anything but. Writing this article, I do not know precisely how my word processing software works—only that it does. This gap in my knowledge is one that is never corrected or contested, and this is the liability. The abstraction of the user away from software continually rewards the irrational belief that a thing works for no reason other than that it does; it "both empowers the programmer and insists on his/her ignorance."[47]

In this way, software presents the perfect occasion for reinforcing the necessary conditions of the most pernicious forms of far-right politics. In her analysis of rights-based capitalist violence, Melamed notes that for this kind of rights-based violence to work it requires a friction-less environment: a perfected, one-way medium of communication through which "the antisocial and supremacist use of rights [can seek] the 'right' to be protected from criticism, from intellection, and

when expedient, from facts."[48] The disconnect between database and presentation, software and user expectation, mirrors the disconnect between epistemological realities and fantasies of conservatism broadly conceived, and specifically the far- and radical- Right. Conservative anti-science discourses—strongly rooted in notions of nature, environment, and biology—recursively legitimate their logics by rerouting into ideas of what is natural, what is good, what is pure, what is morally acceptable. They do this by hijacking the rhetoric of epistemology into a terrain of a naturalized irrationality—one that not only rewrites knowledge and bucks against experience but also dares to rewrite time and history. As Andreas Huyssen has observed, similar to the European interwar years, platforms like "Twitter, Facebook, YouTube, Reddit, Discord, 8chan [. . . suck] all available pasts into its eternal present," feeding a kind of non-temporality which furnishes the discontent required for populist collective action to propel authoritarian figures.[49]

The incapacity of landscape imagery in both form and content provides cover for the requirements of an epistemologically void and malleable environment. Equally, the AMTP helps Google Earth to create a "friction-less environment" in more ways than one. It not only marks the inside/outside of the nation and body politic but also fastens danger onto this marking of difference. The AMTP might be the "universal" texture, and Google Earth might promise a "God-like" view, but these discursive statements stand in contradiction to what the platform delivers: a database of highly selective data stitched together to *mimic* a fantasy of a universal style and God-like experiences. The contradictions of the platform not only mirror the contradictions between right-wing ideals and policy, but also prime their audiences to receive such contradictions as *compatibilities.* In the following section we will explore how this happens with the recruitment of technology at more granular levels. We will, in essence, look at looking.

The Perversion of Sight and Sorting

To begin, we must examine more closely the detailed aspects of the AMTP and how they function within Google Earth. A key part of the AMTP's success is in a process called *clipmapping*, where the corners of textures are "clipped" so that a program is always only saving what is immediately and directly important to viewing. Clipmapping's predecessor, *mipmapping*, stores textures at various levels of detail and resolution, and performs image processing and filtering ahead of command so that the mipmap texture corresponds to the size of the polygon its using: "For example, if the polygon is a square having four pixels on a side, the mipmap level having sixteen texels [a pixel in a texture, sometimes also known as a texture pixel] will be mapped onto the polygon."[50] Clipmapping also stores textures at various levels of detail but differs from mipmapping in that it is "limited to a fixed but roaming footprint . . . [which] means that each clip-level is both twice the effective resolution and half the coverage area of the previous."[51] This technique allows users all the benefits of a mipmap but by only loading the parts relevant to any given view greatly decreases strains on memory, load time, and processing. Spatial computing and XR expert Ari Bar-Zeev has written on the AMTP in an early blogpost, extolling the virtues of clipmapping. He writes:

> Put another way, Google Earth cleverly and progressively loads high-res information for what's at the focal "center" of your view . . . and resolution drops off by powers of two from there. As you tilt and fly and watch the land run towards the horizon, Universal Texture is optimally sending only the best and most useful levels of detail to the hardware at any given time. What isn't needed, isn't even

touched.[52]

While the experience of using Google Earth might summarily promise a God's-eye view on the world—and the title *Universal Texture* purports to put an entire, cohesive universe at your fingertips—it is actually this clever piece of engineering that determines not only what you see, but what is important for you to see.

This condition gives rise to a paradox. Google Earth determines what is important for a user to see while simultaneously asserting that this limited view onto land is "universal," or God-like. We might re-read this condition as a demonstration of how sight, or "what we see," as constituted by a platform like Google Earth is actually a radical *re*-constitution that approaches the limit of visualization while still being able to be referred to as a *kind* of sight. Paul Virilio first named this condition when he charged machines with a kind of "sightless seeing." This "sightless seeing," or "blind vision" describes the kind of vision machines do as an action that does not require light, as human vision does.[53]

Luciana Parisi interprets this further to understand Virilio's concept of the machine's blind vision and sightless seeing as coinciding with a "techno-political theorization of machine vision that starts from machines' negative optics as involving an anti-ocularcentric practice that breaks from the self-positing of the metaphysics of representation."[54] In other words, a machine that "sees" without light suggests that the "seeing" a computer does must correspond to something else. That something else, as Parisi posits, is suggestive of a computational "seeing" that does not code for the representation of something or capture a thing's essence in the language of the binary. Instead, that seeing—what humans "see" through machine-vision—is never assembled by sight but rather by thought. Parisi writes, "Here the gaze of reason becomes a statistical thought or a statistical optics, which according to Virilio, 'generates a series of "visual illusions", or "rational illusions", which affect our understanding as well as reasoning.'"[55] A cascade of interpretations work to create the phenomena on our screens. What a machine is "seeing" might more accurately be said to be what data a machine is visualizing.

On the other side of this, how we come to "know" through machine vision is also never assembled by what we see (because the machine is never seeing, so neither are we). It is instead assembled by what we think. Parisi makes the case that in our contemporary era in which knowledge is automated, we have also inherited a "programmed perception that is no longer based on observation and reflection of the object observed."[56] The way that a machine "sees" the world runs afoul of our metaphors of light and dark derived from Western human culture; "In a computer, the optically active electrons of machines correspond to a series of coded impulses that mediate the real beyond physical or energetic analogy."[57] Computer-generated images and machinic perception are not reassured by stimulus or data from the physical world but instead rely on nothing. Mechanic perception is a data processor in and of itself, a "non-dialectical medium" which, if it does choose to incorporate feedback, does so through algorithms that assimilate the world as data. However, this datafied version of the world is not a neutral indexing of the real but instead data as "predicted and acted upon in anticipation of its happenings."[58]

In this way Parisi's argument stresses a similar idea to that of Dixon-Román's: that opposed to any notion that computers or data merely or innocently represent the world to us, they are actually active agents in forming worlds—both those that we live in, and those that we live amongst. The input and processing of environmental data in and through sensors, algorithms, render engines and

display is a techno-political formation that gets mistaken for "mere" or "neutral" visualization. In this relay, what we do with Google Maps is much less observe or cognize the world but instead imbibe cognitions pre-determined by the engineering cultures and statistical gaze that conforms itself to techno-capitalism and creates the environment anew.

I understand Parisi's proposal to suggest that computers display only the future—a "statistical thought or a statistical optics"—meanwhile whatever claims we might make about how or what machines perceive, and whatever language we assign to these processes, would require a complete overhauling of our understandings of notions such as light, time, and representation.[59] Significantly within these observations is an admission of the unraveling of reason and the foundational bases for our Western, pre-digital epistemologies. To this end, Parisi points to an argument Trevor Paglen makes in 2016 about the growing culture of "invisible images," meaning invisible to humans.[60] Paglen notes that digital images in general are only actually readable to computers and cannot be seen by humans without computer aid, and, even with this aid, only under certain conditions. This change to visual culture is alarming, as Paglen and other scholars of visual culture have pointed out, for many reasons, including the fact that the invisibility of images "allows for the automation of vision on an enormous scale and, along with it, the exercise of power on dramatically larger and smaller scales than have ever been possible."[61] Not only that, but the very premise of invisible images challenges a cornerstone of Western epistemology, namely that *seeing* has a direct relation to *knowing.* If there are images that we cannot see, then human vision is both incomplete and fallible, thus throwing the methods of positivism and empiricism, for example, into question.

This reappraisal of human/machine sight signals a fundamental realignment of the flows and levers of power. "Ideology's ultimate trick has always been to present itself as objective truth, to present historical conditions as eternal, and to present political formations as natural," Paglen writes, in what should be an alarming call back to Huyssen's words on the eternal present of the internet. Invisible images—images without a human interloper, as Paglen assesses, or images that only arbitrarily feedback with algorithms that themselves are inventions of statistical validity, as Parisi argues—are an enemy hiding in plain sight. Paglen puts it best:

> Because image operations function on an invisible plane and are not dependent on a human seeing-subject . . . they are harder to recognize for what they are: immensely powerful levers of social regulation that serve specific race and class interests while presenting themselves as objective.[62]

From this perspective we can now address a final way that the AMTP and Google Earth embody and direct right-wing values. As stated above, given the sprawl of right-wing ideologies and their intersections with nature, it comes as no surprise that amongst their few shared characteristics, variability is one of them. Scholars have flat-out determined that ecofascism's only consistent feature is "inconsistency."[63] Yet another quality that most, if not all, radical-right ideologies share is the need for the invention of "an other," or an enemy figure marked out by difference. This tactic has been addressed in the ways that SGI and the AMTP furnish a kind of organicist logic that invents inside(rs) and outside(rs). Yet as Paglen's words warn us, the formation of difference also takes place at much deeper levels of technological enaction.

Ramon Amaro has laid out the ways in which digital technology, and specifically machine learning, are not simply marred by bias but are, in fact, an extension of the colonial techniques that brought racializing schemas into existence. Hardware and software are the legacies of colonial philosophies and sciences. As Amaro shows, techniques, knowledge, and protocols as wide-ranging as Leibniz's differential calculus and the Zong massacre are evidence of the ways various techniques of "knowing" were used to legitimate the creation of difference. Even though there is no sound basis for the idea that humans can be grouped according to skin color (for example) ideas of "race" were nevertheless introduced and acted upon as both an empirical and scientifically supported "fact." What's more is that disciplines and techniques were further built up around this false knowledge. As Amaro notes, "by the second half of the eighteenth century, this power transformed into techniques that . . . evolved into 'nondisciplinary' instruments dissolved into everyday social practices."[64]

This is what Sylvia Wynter has introduced as the *bioepisteme*—a description for the way knowledge becomes a weapon, and particularly one able to carve up bodies into the racialized and affectable. Machine learning perfectly straddles the bioepisteme and technologization. As Amaro notes, race never offered any insight into the constitution of human bodies or human societies. It was instead a precondition enabling "the white European male a fictive sense of position at the apex of species, and consequently an implicit and explicit sense of power over the Other."[65] Similarly, while the coding of machine learning appears to flatten out all people, places, and things in its "universal" or "neutral" mathematical language, a closer look reveals that machine learning is actually always a process of sorting, ordering, and hierarchizing. In this way machine learning replays the colonial bioepisteme which always already sees bodies as available for sorting, though—crucially—with White bodies at the top, or as the default, from which all other notions of difference flow.

As Amaro shows, the architecture of machine learning—in both its hardware and its epistemological foundations and assumptions—provides a recursive scaffolding that continues the legitimation of race. Seen as a neutral tool, insulated from bias through a loop of machine-to-machine processing and working through the language of supposedly "neutral" mathematics, machine learning "provides, in a sense, the assumptions on which rest the epistemic claims of racial objectivity."[66] The contradiction of machine learning is that while it is popularly accepted that the calculative functions of sorting, processing, and prediction are neutral and impotent acts, these functions are actually born out of "atmospheric conditions that have attempted to organize both humans and technical objects around assumptions of race."[67] Machine learning and its correspondent architectures are not appendages to the question of race but in fact the very drivers of racialization.

Built on a colonial and racialized foundation, technologies of visualization and automation—whether through the AMTP, machine learning, computational vision, or any other and hardware—create tighter and more closed systems the more they are relied upon in blind faith, and the more in which they operate in an environment with no possibility of critical rupture. As Roderick Ferguson reflects, "one of the characteristics of fascism then and now is the mass mobilization of ad hominem attacks [. . .] [Fascism's] aim is simply to manipulate irrationality, not as something that is natural to human beings but as something that is mandated—as Adorno says—by 'powerful political and economic interests.'"[68] Ferguson highlights how fascism reinvents irrationality and logical fallacy not as pathologies of the individual but as a structure of social order. Inconsistency, too, lacks a pattern and a rationality. These examples are not a bug but a feature of the system. Freed from any

allegiance to reality, fascism remains agile enough to self-sustain despite its inherent contradictions. Such a configuration supports another shared characteristic of right-wing ideologies in their preference for mobilizing *affect* in place of any attempts at *persuasion* or, for that matter, *accuracy*. The mobilization of affect meets very little resistance in the context-free environment and from the vision-less machine, which passes on only its *knowings*, and only what it has inherited in knowing.

CONCLUSION (AND AN APPEAL TO BREAK WITH MANNERED CRITIQUE)

The sum effect of the dynamics discussed above exist at multiple scales and registers. In this article, they occur acutely in the AMTP, in clipmapping, and in Google Earth; they also occur more broadly in the cultures and histories of technology, culture, and politics. One of the challenges that I suspect holds back more forceful confrontations with the politics of technologies in their interactions with environments and society is that it can be challenging to make sustained and persuasive arguments that moves across these scales. When I have felt most deflated by this task, I recall a lesson I appreciated from Jodi Melamed's analysis of the literary canon wars of the '90s. Taken as an analogy (and not entirely unrelated) the canon wars proposed "an extraordinary premise: that every time an English teacher put together a reading list, the future of the nation hung in the balance."[69] Literature on emerging forms of right-wing politics make clear that the disbelief that power can operate at so minute and granular a level is precisely what supports its iterative successes. The incredulity of the soft power of the 1990's American classroom (or in our case, *the funny-looking fantasy Earth software!*) fails to acknowledge how modern power often functions in distributed and diffuse ways, creating the conditions for small, simultaneous expressions of power to coalesce—unchecked—into something with larger impact.

The procedures cohered in clipmapping signal one of a series of choices the AMTP algorithm makes about what a viewer will see, and how they will see it. These engineering decisions are programmatic choices of a total system built for data optimization. For this reason, some readers might allege that the degrees between the kinds of control over the visible and censorship are too far removed from the programming choices made by computer engineers simply looking to move a high volume of data through a limited system. This might be true. However, we cannot admit this counterpoint without also acknowledging how control over the visible and the aesthetic fits a pattern, and patterning, of conservative power. This patterning oftentimes engages supremacist and fascist modes of fashioning social difference as a collective enemy. We see how technology can also do this, too, both in content and in form. Melamed argues that liberal multiculturalism (perceived as good and empowering—a way to overcome racism) has worked through regimes of "official" antiracism that (counterintuitively!) provide normative disciplining and rationality for a project with goals of performing the opposite. Official antiracisms (seen in discourses such as racial liberalism and multiculturalism) cohered normalizing and rationalizing powers that enabled the forms of racialization antiracism purported to attack. It did so by continuing

> . . . the trick of racialization, a process that constitutes differential relations of human value and valuelessness according to specific material circumstances and geopolitical conditions while appearing to be (and being) a rationally inevitable normative system that merely sorts human beings into categories of difference.[70]

By this same logic, the Universal Texture constitutes a mode of environmental visuality (perhaps, even, visuality writ large) according to a specific logic rooted in capitalist, militarized logics (not just by dint of where the logic is developed—at SGI Inc., in the '90s, as part of a project of market competitiveness and for training protocols at the U.S. Department of Defense). This mode of visuality sought to optimize the movement of data through limited hardware systems, yes, and *also overtly sought* to optimize the ability to train the human body to the fighter plane—to its ultimate goal of long-rage fatality. While Google Earth appears as a fun platform to explore and is even used presently for educational purposes and projects of civic good, its overall framework and mode of operation—everything about it, from its design to its engineering—has been aimed not at a civic good but, ultimately, at a refinement of the militarized aerial body.[71]

By way of announcing what the broader stakes and conclusion of this article are, I want to first admit that the article does labor through and under its own liability. The approaches contained herein are not comprehensive, and some might even go as far as to say this information and evidence suffers from the logical error of cherry picking. That may be true. However, if I have failed to fully bear the burden of proof that yes, these technologies belong to the most virulent, right-wing projects that plague our geopolitics, I would offer as defense that this alone is not reason enough to invalidate the notion entirely. To acquiesce, or to be persuaded by such criticism, would be to wither under the same pressures that have kept the U.S. Democratic party from effectively responding to what has been in recent years, without question, the most offensive and bald-faced attacks on democracy, morality, and—most egregious of them all—basic human values. It is not reasonable to require an overwhelming proof of concept when the danger at your door is as fatal as the one presented by rising right-wing authoritarianism. One need not to be a revolutionary to subscribe to the revolutionary critique of institutions and institutional logics that always place the burden of proof on the powerless *as* they attempt to speak truth to power. We must respond to the content of crisis, and not its forms, leaving moderation and *whatabout-ism* in its more rightful places as options for conflicts of lesser degrees.

It must also be said that to acquiesce to these criticisms would also be to fall prey to what is—in both form and content—the stakes (and successes) of the marriage of environments and digital technologies. Landscape as a fashioning of power that signals nothing more than itself is a semiotics emptied of meaning. It is both metaphorically and literally the context-free environment that Melamed identifies as required for rights-based capitalist violence, and by analogy, the eternal-present event that nourishes the circulation of racism and right-wing rhetoric in Huyssen's appraisals. Digital technologies add to this with their obscured colonial logics; they are continually strengthened by the mass-misunderstanding of digital images and visualizations within human visual culture. If the invitation to look at landscape is an invitation to look at looking itself, then it is no wonder that landscape and computer graphics have become perfect bedfellows.

To borrow phrasing from Parisi: amidst the complexity of "computer images that cannot be seen and yet they do things in the world, what does this 'doing' amount to?"[72] Her answer is a productive path towards a praxis: "In other words, the operational image fits with the cybernetic imperative of self-regulatory feedback which ensures that machine-to-machine communication can condition all orders of reality."[73] Given the histories and logics cohered in our technologies and normative assumptions endemic to human cultures, this sealed feedback loop needs breaking. How this is performed will not be through better representations or more elaborate sensing of data. It needs to instead begin with a reckoning of ethics and human values that exceed our technological innovations. It might also benefit from a genuine curiosity about the alienness of this thing we call

"environment*,"* but might more appropriately be called "landscape"—environment as an invitation to look at nothing, environment as an invitation to look at looking, and environment as a nothingness that is, nevertheless, coded for in a sight-less, visual grammar legible only to machines.

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ENDNOTES

[1] Jack Z. Bratich, *On Microfascism: Gender, War, and Death* (Common Notions, 2022), 10.
[2] Andreas Huyssen, "Behemoth Rises Again: Not an Analogy!," *N+1* (blog), July 29, 2019, https://www.nplusonemag.com/online-only/online-only/behemoth-rises-again/.
[3] Nadia Urbinati, "Political Theory of Populism," *Annual Review of Political Science* 22, no. Volume 22, 2019 (May 11, 2019): 111–27, https://doi.org/10.1146/annurev-polisci-050317-070753.
[4] Andrew Ofstehage, Wendy Wolford, and Saturnino M. Borras, "Contemporary Populism and the Environment," *Annual Review of Environment and Resources* 47, no. Volume 47, (October 17, 2022): 673, https://doi.org/10.1146/annurev-environ-012220-124635.
[5] Matthew Sitman and Sam Adler-Bell, "Did It Happen Here?," January 19, 2021, in *Know Your Enemy,* produced by Jesse Brenneman, podcast, MP3 audio, 1:44, https://podcasts.apple.com/us/podcast/did-it-happen-here/id1462703434?i=1000505545283.
[6] Urbinati, "Political Theory of Populism."
[7] I am borrowing language here that is specifically speaking to ideas of "wilderness," but the lessons are still applicable, especially when considering the overlap in landscape as a particular image of place and wilderness as a particular subset and descriptor of images of place. See: Cronon, William. "The Trouble with Wilderness; or, Getting Back to the Wrong Nature." In Uncommon Ground: Toward Reinventing Nature, edited by William Cronon. W.W. Norton, 1996.
[8] For two examples of scholarship in this realm, see: M. Beatrice Fazi, "Introduction: Algorithmic Thought," *Theory, Culture & Society* 38, no. 7–8 (December 1, 2021): 5–11, https://doi.org/10.1177/02632764211054122. Luciana Parisi, "Automated Thinking and the Limits of Reason," *Cultural Studies ↔ Critical Methodologies* 16, no. 5 (October 1, 2016): 471–81, https://doi.org/10.1177/1532708616655765.
[9] Jesse Callahan Bryant and Justin Farrell, "Conservatism, the Far Right, and the Environment," *Annual Review of Sociology* 50, (2024): 274, https://doi.org/10.1146/annurev-soc-083023-035225.
[10] Clement Valla, "The Universal Texture," *RHIZOME Blog*, July 31, 2012, http://rhizome.org/editorial/2012/jul/31/universal-texture/.
[11] Valla, "The Universal Texture."
[12] Valla, "The Universal Texture."
[13] Evans & Sutherland was founded in 1968 by two professors in the Computer Science department at University of Utah and is "a pioneering American computer firm in the computer graphics field." Tanner recalls that Evans & Sutherland were making "all of the multi-million-dollar flight simulators for the U.S. government at the time." Their simulation business, which

primarily "sold products . . . used by the military and large industrial firms for training and simulation" was sold to Rockwell Collins in 2006.
[14] Christopher C. Tanner, Asynchronous multilevel texture pipeline, US Patent US6618053 B1, filed October 6, 2000, and issued September 9, 2003, http://www.google.com/patents/US6618053.
[15] Chris Butler, "State Power, the Politics of Debt and Confronting Neoliberal Authoritarianism," *Law and Critique* 29, no. 3 (November 2018): 313, https://doi.org/10.1007/s10978-018-9233-z.
[16] Butler, "State Power," 313.
[17] Butler, "State Power," 311.
[18] Marie Gottschalk, "The Opioid Crisis: The War on Drugs Is Over. Long Live the War on Drugs," *Annual Review of Criminology* 6, no. Volume 6, 2023 (January 27, 2023): 363–98, https://doi.org/10.1146/annurev-criminol-030421-040140.
[19] I am here borrowing importing method and terminology from Balša Lubarda following Michael Freeden. While Lubarda layers on further agility to the framework, the base of the proposal is to analytically envision ideology not "as solid, manipulative systems deconstructed by free-floating and detached analysts" but instead as "ubiquitous yet volatile forms of political thinking organised in conceptual clusters with a distinguishable hierarchy." Balša Lubarda, "Beyond Ecofascism? Far-Right Ecologism (FRE) as a Framework for Future Inquiries," *Environmental Values* 29, no. 6 (December 1, 2020): 713–32, https://doi.org/10.3197/096327120X15752810323922.
[20] Jodi Melamed, "The Proliferation of Rights-Based Capitalist Violence and Pedagogies of Collective Action," *American Quarterly* 70, no. 2 (2018): 180, http://dx.doi.org.proxy.library.upenn.edu/10.1353/aq.2018.0013.
[21] Melamed, "Proliferation," 180.
[22] Melamed, "Proliferation," 180.
[23] Melamed, "Proliferation," 180.
[24] Melamed, "Proliferation," 180.
[25] James E. Dobson, *The Birth of Computer Vision* (University of Minnesota Press, 2023), 100.
[26] Ezekiel Dixon-Román, "Algo-Ritmo: More-Than-Human Performative Acts and the Racializing Assemblages of Algorithmic Architectures," *Cultural Studies ↖ Critical Methodologies* 16, no. 5 (October 1, 2016): 483, https://doi.org/10.1177/1532708616655769.
[27] Dixon-Román, "Algo-Ritmo," 485.
[28] Dixon-Román, "Algo-Ritmo," 485.
[29] Dobson, *The Birth of Computer Vision*, 100.
[30] Bryant and Farrell, "Conservatism, the Far Right, and the Environment."
[31] Bryant and Farrell, "Conservatism, the Far Right, and the Environment."
[32] Bryant and Farrell, "Conservatism, the Far Right, and the Environment."
[33] Michael Goldberg, "Fire in the Valley," *Wired*, January 1, 1994, https://www.wired.com/1994/01/sgi/.
[34] Tanner, interview.
[35] Tanner worked at SGI during his early 20's, having recently graduated from Princeton University.
[36] Here I want to strongly deemphasize any connection that might be made between the argument I am making and any personal responsibility I am seen to be placing on Tanner and his co-workers. The power formations I am addressing occur very specifically at a register above the level of the individual. State power indexes with conservative and right-wing desire and together builds to a *drive for bodies*—not individuals.

[37] Raymond Williams, *The Country and the City*, (Oxford Univ. Press, 1975).
[38] W.J.T. Mitchell, "Imperial Landscape," in *Landscape and Power*, ed. W. J. T. Mitchell, 2nd ed. (University of Chicago Press, 2002), viii.
[39] Valla, "The Universal Texture."
[40] Valla "The Universal Texture."
[41] Mitchell, "Imperial Landscape," viii.
[42] Jacob Gaboury, *Image Objects: An Archaeology of Computer Graphics* (The MIT Press, 2021), https://doi.org/10.7551/mitpress/11077.001.0001.
[43] For more on this see: Hanneke Grootenboer, *The Rhetoric of Perspective: Realism and Illusionism in Seventeenth-Century Dutch Still-Life Painting*, (University of Chicago Press, 2005).
[44] Nicole Sansone Ruiz, "Days Without Clouds: Realism, Images, and Target Classifiers at Google Earth Engine," *Computational Culture*, no. 9 (July 2023), http://computationalculture.net/days-without-clouds-realism-images-and-target-classifiers-at-google-earth-engine/.
[45] Wendy Hui Kyong Chun, "On Software, or the Persistence of Visual Knowledge," *Grey Room*, no. 18 (2004): 28.
[46] Chun, "On Software," 28.
[47] Chun, "On Software," 38.
[48] Melamed, "Proliferation," 180.
[49] Huyssen, "Behemoth Rises Again: Not an Analogy!"
[50] Tanner, Asynchronous, 7.
[51] Avi Bar-Zeev, "How Google Earth [Really] Works," *Reality Prime* (blog), July 3, 2007, http://www.realityprime.com/blog/2007/07/how-google-earth-really-works/.
[52] Bar-Zeev, "Google Earth [Really] Works."
[53] Paul Virilio, *The Vision Machine* (Indiana University Press, 1994).
[54] Luciana Parisi, "Negative Optics in Vision Machines," *AI & SOCIETY* 36, no. 4 (December 2021): 1281–93, https://doi.org/10.1007/s00146-020-01096-7.
[55] Parisi, "Automated Thinking," 1282.
[56] Parisi, "Automated Thinking," 1281.
[57] Parisi, "Automated Thinking," 1281.
[58] Parisi, "Automated Thinking," 1281.
[59] Parisi, "Automated Thinking," 1281.
[60] Trevor Paglen, "Invisible Images (Your Pictures Are Looking at You)," *The New Inquiry* (blog), December 8, 2016, https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/.
[61] Paglen, "Invisible Images."
[62] Paglen, "Invisible Images."
[63] Bryant and Farrell, "Conservatism, the Far Right, and the Environment."
[64] Ramon Amaro, *The Black Technical Object: On Machine Learning and the Aspiration of Black Being* (Sternberg Press, 2022), 23.
[65] Amaro, *The Black Technical Object*, 22.
[66] Amaro, *The Black Technical Object,* 10.
[67] Amaro, *The Black Technical Object,* 10.

[68] Roderick A. Ferguson, "Authoritarianism and the Planetary Mission of Queer of Color Critique: A Short Reflection," *Safundi* 21, no. 3 (July 2, 2020): 284, https://doi.org/10.1080/17533171.2020.1773632.
[69] Jodi Melamed, *Represent and Destroy: Rationalizing Violence in the New Racial Capitalism*, Difference Incorporated (Univ. of Minnesota Press, 2011), 33.
[70] Melamed, *Represent and Destroy*, 2.
[71] For more on the origins of Google Earth and how it positions itself as a civic good, see: Sansone Ruiz, "Days Without Clouds."
[72] Parisi, "Negative Optics in Vision Machines," 1285.
[73] Parisi, "Negative Optics in Vision Machines," 1286.

REFERENCES

Amaro, Ramon. *The Black Technical Object: On Machine Learning and the Aspiration of Black Being.* Sternberg Press, 2022.
Bar-Zeev, Avi. "How Google Earth [Really] Works." *Reality Prime Blog*, (2007). http://www.realityprime.com/blog/2007/07/how-google-earth-really-works/.
Bratich, Jack Z. *On Microfascism: Gender, War, and Death*. Common Notions, 2022.
Bryant, Jesse Callahan, and Justin Farrell. "Conservatism, the Far Right, and the Environment." *Annual Review of Sociology* 50, (2024): 273–96. https://doi.org/10.1146/annurev-soc-083023-035225.
Butler, Chris. "State Power, the Politics of Debt and Confronting Neoliberal Authoritarianism." *Law and Critique* 29, no. 3 (2018): 311-331. https://doi.org/10.1007/s10978-018-9233-z.
Chun, Wendy Hui Kyong. "On Software, or the Persistence of Visual Knowledge." *Grey Room*, no. 18 (2004): 26-51. https://doi.org/10.1162/1526381043320741.
Cronon, William. "The Trouble with Wilderness; or, Getting Back to the Wrong Nature." In *Uncommon Ground: Toward Reinventing Nature*, edited by William Cronon. W.W. Norton, 1996.
Dixon-Román, Ezekiel. "Algo-Ritmo: More-Than-Human Performative Acts and the Racializing Assemblages of Algorithmic Architectures." *Cultural Studies ↔ Critical Methodologies* 16, no. 5 (2016): 482-490. https://doi.org/10.1177/1532708616655769.
Dobson, James E. *The Birth of Computer Vision.* University of Minnesota Press, 2023.
"Evans & Sutherland Computer Corporation - Company Profile, Information, Business Description, History, Background Information on Evans & Sutherland Computer Corporation." n.d. Accessed November 18, 2021. https://www.referenceforbusiness.com/history2/28/Evans-Sutherland-Computer-Corporation.htm.
Fazi, M. Beatrice. "Introduction: Algorithmic Thought." *Theory, Culture & Society* 38, no. 7–8 (2021): 5–11. https://doi.org/10.1177/02632764211054122.
Ferguson, Roderick A. "Authoritarianism and the Planetary Mission of Queer of Color Critique: A Short Reflection." *Safundi* 21, no. 3 (2020): 282-209. https://doi.org/10.1080/17533171.2020.1773632.
Gaboury, Jacob. *Image Objects: An Archaeology of Computer Graphics*. The MIT Press, 2021.
Gottschalk, Marie. "The Opioid Crisis: The War on Drugs Is Over. Long Live the War on Drugs." *Annual Review of Criminology* 6 (2023): 363–98. https://doi.org/10.1146/annurev-criminol-030421-040140.
Grootenboer, Hanneke. *The Rhetoric of Perspective: Realism and Illusionism in Seventeenth-Century Dutch Still-Life Painting*. University of Chicago Press, 2005.

Huyssen, Andreas. “Behemoth Rises Again: Not an Analogy!” *N+1 Blog*, (2019): https://www.nplusonemag.com/online-only/online-only/behemoth-rises-again/.
Lubarda, Balša. “Beyond Ecofascism? Far-Right Ecologism (FRE) as a Framework for Future Inquiries.” *Environmental Values* 29, no. 6 (2020): 713–32. https://doi.org/10.3197/096327120X15752810323922.
Melamed, Jodi. *Represent and Destroy: Rationalizing Violence in the New Racial Capitalism*. University of Minnesota Press, 2011.
Melamed, Jodi. “The Proliferation of Rights-Based Capitalist Violence and Pedagogies of Collective Action.” *American Quarterly* 70, no. 2 (2018): 179-187, http://dx.doi.org.proxy.library.upenn.edu/10.1353/aq.2018.0013.
Mitchell, W.J.T. “Imperial Landscape.” In *Landscape and Power*, edited by W.J.T. Mitchell. University of Chicago Press, 2002.
Ofstehage, Andrew, Wendy Wolford, and Saturnino M. Borras. “Contemporary Populism and the Environment.” *Annual Review of Environment and Resources* 47 (2022): 671–96. https://doi.org/10.1146/annurev-environ-012220-124635.
Paglen, Trevor. “Invisible Images (Your Pictures Are Looking at You).” *The New Inquiry Blog*, (2016). https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/.
Parisi, Luciana. “Automated Thinking and the Limits of Reason.” *Cultural Studies↜Critical Methodologies*16, no. 5 (2016): 471–81, https://doi.org/10.1177/1532708616655765.
Parisi, Luciana. “Negative Optics in Vision Machines.” *AI & SOCIETY* 36, no. 4 (2021): 1281–93, https://doi.org/10.1007/s00146-020-01096-7.
Sansone Ruiz, Nicole. “Days Without Clouds: Realism, Images, and Target Classifiers at Google Earth Engine.” *Computational Culture*, no. 9 (2023). http://computationalculture.net/days-without-clouds-realism-images-and-target-classifiers-at-google-earth-engine/.
Sitman, Matthew and Sam Adler-Bell, co-hosts. Know Your Enemy. Episode 27, “Did It Happen Here?,” January 19, 2021. Podcast, 1 hour, 44 min. https://podcasts.apple.com/us/podcast/did-it-happen-here/id1462703434?i=1000505545283.
Tanner, Christopher C. Asynchronous Multilevel Texture Pipeline. US Patent US6618053 B1, filed October 6, 2000, and issued September 9, 2003. http://www.google.com/patents/US6618053.
Urbinati, Nadia. “Political Theory of Populism.” *Annual Review of Political Science* 22, (2019): 111–27. https://doi.org/10.1146/annurev-polisci-050317-070753.
Valla, Clement.“The Universal Texture.” *RHIZOME Blog*, July 31, 2012. http://rhizome.org/editorial/2012/jul/31/universal-texture/.
Virilio, Paul. *The Vision Machine*. Indiana University Press, 1994.
Williams, Raymond. *The Country and the City*. Oxford University Press, 1975.

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