

## **Environmental Iterations: Digital Habitats and the Making of Multiple Screen Worlds**

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The concept of networked cinemas cracks open a dialectic between the movements and connections of the *network* in digital forms and the stasis and isolation of *cinema* in its analogue forms. Networked cinema moves and connects across iterations to produce new formulations of screens as malleable habitats. It suggests the emergence of multiple screen worlds—spaces that refuse the arbitrary separations between people and environment, between networks and screens, and between the natural and the built.

This essay probes these productive contradictions in the current media ecologies of networked cinema by grounding analysis in the concept of *environmental iterations*, an idea that combines the notion of our worlds as subject to change through series of minor mutations organized around the operation of the iterative, that which repeats, morphs, responds, changes, and develops through code, interface, user-engagement, and platform. To make this argument, we turn to a series of new media projects from Canada, Germany, Italy, South Africa, Turkey, United Arab Emirates, and the United States that marshal environmental iterations to build digital habitats. These projects underscore that networked cinemas require a multiplication of sites, strategies, and situated practices.

Our analysis moves and connects through three layers to demonstrate the complex constructions of the environmentally-located, networked-cinema imaginary: habitats where multiple organisms and species cohabitate; intertwinings of the computational and the biological; and virtual and imaginary mapping of new geographies. These projects themselves move through and connect with ways that we increasingly live through digital habitats, which we access on multiple screens throughout the day. The projects extend and complicate assumptions about digital relationships as a function of environmentalism. This essay, thus, learns from projects that work between these assumptions and reevaluations to think through digital media about our online and offline habitats and our online and offline cohabitants.<sup>1</sup>

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<sup>1</sup> The projects discussed were programmed as “Iterations of Habitats,” an exhibition for the 2015 edition of the Finger Lakes Environmental Film Festival: <http://www.ithaca.edu/fleff>. We develop concepts from Dale Hudson and Patricia R. Zimmermann, *Thinking through Digital Media: Transnational Environments and Locative Places* (New York: Palgrave Macmillan, 2015).

## Environmental iterations

Iterations suggest mutations and reconfigurations. They derive from biology and genetics, where they are conceived as incremental changes in structure, sequence, and design through error or insertion. In mathematics and computational sciences, iterations are repetitions of a function, statement, application, software, or hardware that include minor mutations, thereby working successively and incrementally closer to solutions of problems. Iterations can be recursive or fractal, self-similar or mirrored, not unlike patterns in nature. Reconceived as both conceptual and biological systems, iterations offer a way into the fluid, responsive practices of new media projects that build change and engagement with the environment into their conceptual and technological structures. Simulations become environments for artificial life, much like physical environments for synthetic life. Digital habitats reveal environmental iterations that enfold and envelope, recombining and realigning the biological and the computational alike. Iterations imply improvements and progress. From the vantage of environmentalism, however, notions of improvement and progress demand critical evaluation, particularly in terms of modeling for genetically modified organisms, neoliberal economic policies, and ostensibly democratic elections, though such notions can expand our understanding of movement and connections.

Early scholarship on digital technologies and networked environments tended to emphasize their allegedly disembodied qualities, which were imagined in democratizing terms. Cyberfeminism, for example, embraced a digital liberation from the visual sexism of analogue technologies.<sup>2</sup> Cyborgs and artificial intelligence (AI) thought and acted independently of humans without being contained in the kinds of physical bodies—human and nonhuman animals, all biological and sometimes bioengineered—that we typically attribute to these kinds of agency. With personal computing with graphical user interface (GUI), notably the Apple Macintosh and Microsoft Windows in 1984 and 1985, this technoutopia was reclaimed by the symmetrical powers of visual culture. Avatars in chatrooms and later role-playing environments ushered a return to visual sexism, racism, and speciesism, years before Hollywood visualized cyborgs and AI in hyper-feminized, hyper-

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<sup>2</sup> See: Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1990) and Sarah Kember, *Cyberfeminism and Artificial Life* (New York: Routledge, 2003).

sexualized, and generally hyper-white ways.<sup>3</sup> We tend to understand the invisible best when it is rendered as visible, such as electronic code in graphic representations as 1s and 0s. We also tend to ignore ways that we inhabit distributed networks that distort our sense of time, space, and embodiment. More recent iterations of digital technologies, such as the Internet of Things, make us more conscious of our embedded nature in digital technologies while simultaneously diverting our attention to ways that inanimate objects like automobiles and refrigerators not only cohabit with us but also think alongside us.<sup>4</sup> We now “see” that our smartphone is talking to the microwave and that our habitats have changed alongside our habits. Environmental iterations nonetheless are coupled with biological, environmental, and climatic hazards from toxic air, water, and land. Ecosystems are punctured by gated communities, militarized borders, and free zones. Every step we take with our iPhones and Fitbits are tracked by global position system (GPS) technologies in an era of ubiquitous surveillance, big data, and hactivism.

Environmental iterations and digital habitats fuse the computational and the biological to explore digital dimensions of our environments in ways prompt reflection on to the effects of mining for rare minerals to power our mobile devices and the ways that computer networks are organized like bee colonies.<sup>5</sup> In ecological and environmental sciences, a habitat is where an organism lives. Different organisms—animal, plant, and bacterium—cohabit and share habitats, though sometimes one species will consume most of the resources in a multispecies habitat. Human animals often destroy the natural habitats of other species, causing migrations and adaptations, yet human animals often cast their accidental cohabitants as an invasive species. Habitats exist in flux. The Anthropocene recognizes that ecosystems that have existed for centuries and form the habitats of a multitude of species can suddenly be annihilated by the interventions of this single species.

Francis Knoetze’s *Cape Mongo* offers five mythical “trash creatures,” recycled from consumer waste, who journey through modern Cape Town where they reveal competing forces within multiracial and multispecies habitats. Each video of *Cape Mongo* is composed

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<sup>3</sup> See: Lisa Nakamura, *Digitizing Race: Visual Cultures of the Internet* (Minnesota: University of Minnesota Press, 2007) and *Cybertypes: Race, Ethnicity, and Identity on the Internet* (New York: Routledge, 2013).

<sup>4</sup> See: Samuel Greengard, *The Internet of Things* (Cambridge: The MIT Press, 2015).

<sup>5</sup> For scholarship in these areas, see: Keith Veronese, *Rare: The High-Stakes Race to Satisfy Our Need for the Scarcest Metals on Earth* (Amherst [NY]: Prometheus, 2015) and Jussi Parikka, *Insect Media: An Archaeology of Animals and Technology* (Minnesota: University of Minnesota Press, 2010).

of live performance and found footage and offers a different iteration of Knoetze's critical analysis of Cape Town. Other projects include ones that imagine habitats shared by biological and computational organisms. Chiara Passa's *Live Architectures* animates Google Earth, pointing to the liquidity of such environments. Ben Grosser's *Computers Watching Movies* speculates on how the world is seen by computers, were we to share a couch and stream a video with them. The project reconfigures media reception theory for a posthuman moment.

Other projects turn to imbalances based on gender, race, and religion as part of our social habitat. Shazia Javed's *Can You Hear Me?* restages and reframes the question of whether the voices of Muslim women can be heard above the noise of assumptions about them based on their clothing. Comparably, Leah Shafer's *Declaration of Sentiments: Wesleyan Chapel* restages and reframes the reading of the mid-nineteenth-century *Declaration of Sentiments* that announced the right to rights for women in the United States—something that has come under increasing attack in the twenty-first century. **Banu Colak's** *The New Empire* is a poetic examination on tensions between our geopolitical and natural habitats that focuses on the erosions and formations of nation-states. Mauro Ceolin's *Spore's Ytubesoundscape and His Wildlife* recombines the sounds of artificial creatures from the multiplayer game *Spore* that users have uploaded to YouTube. Finally, Kuesti Fraun's ultra-short video *Capacities* takes a humorous look at our human capacity to create vast amounts of waste and our human incapacity to deal with it.

These new media projects implicitly critique and intervene into a series of assumptions about digitality: the idea that virtual and physical environments or worlds are disconnected; the de facto ideology that the virtual is dematerial; and the utopian fantasy that virtual environments somehow represent a chance at a more democratic community, even world peace and global equity. Our invocation of the environment and habitats refute these claims by insisting on the materialities of lived spaces as well as the materialities of the technological. We ask how we can identify the minor mutations mobilized when the lived spaces merge with the technologies of code, algorithms, interfaces, users, and screens in a digital habitat making of multiple cinema worlds. Here, simulations become environments, and environments are interrogated and denaturalized. These works mobilize and create new habitats where the biological, the technological, the political, and the geographical recalibrate.

### **Where organisms and where multispecies live**

Our daily lives take place in natural and unnatural habitats that we actively produce and negotiate. They are places of encounters, though we are often blind or deaf to seeing and hearing our cohabitants. Artists have taken on this subject in innovative ways, forcing us to hear and see what we have been largely trained by commercial media to ignore, disavow, or discredit. This section examines Francois Knoetze's *Cape Mongo* (South Africa 2015) and Shazia Javed's *Can You Hear Me?* (Canada 2015), which offer us an opportunity to consider multicultural community in terms of religion and species as contemporary environmental iterations.

Composed in five different versions—*VHS* (<https://vimeo.com/116067928>), *Glass* (<https://vimeo.com/117475897>), *Metal* (<https://vimeo.com/117475896>), *Paper* (<https://vimeo.com/117475895>), and *Plastic* (<https://vimeo.com/117475892>)—*Cape Mongo* follows the journeys of five mythical “trash creatures” through Cape Town. The video and performance takes its name from the slang expression “mongo” for an object thrown away and later recovered. The term also has other meanings that carry the significance of Knoetze's title from the realm of nonhuman to human. “Mongo” is derogatory term for allegedly unintelligent people in an abbreviated version of “Mongoloid,” which itself carries over meaning from earlier eras, such as its use as an ethnographic classification under scientific racism and later use to describe people with intellectual disabilities. The term is also a brand name for interactive JavaScript shell interface that helps coders evaluate the functionality of script. In an increasingly globalized world, locative context is urgent and indispensable. By physically embodying his trash creatures, Knoetze invites us to see and listen more attentively.

Each character emerges from the city's growing dumps of consumer waste. By repurposing a term whose meaning is multivalent, Knoetze is able to ask us to see and listen for ourselves. He does not offer recognizable talking points or organize his ideas in the consumer-friendly format of a TED Talk. Although we worry about the damaging effects of carbon emissions and non-recyclable waste, we tend not to consider such practices as embedded in the toxic effects of racism and segregation. The belated recognition of contaminated water in Flint (Michigan), United States, is suggestive of ways that people are sometimes treated as “trash” by being forced to sustain themselves with

trash as both food and shelter. Knoetze's project evokes Jorge Furtado's landmark documentary *Ilha das flores/Isle of Flowers* (Brazil 1989) about women and children, who forage for food in a dump after pigs first eat under structural inequality that we ignore.<sup>6</sup>

The context of Cape Town is significant to Knoetze's project, which replaces the word "town" with "mongo," thus suggesting the interchangeability or equivalencies of places of habitation and processes of rehabilitation and recuperation. Cape Town is a destination for migrants and expatriates from throughout Africa and beyond, making the city racially/ethnically, nationally, and culturally diverse. South Africa's post-Apartheid ascendancy to the position of an emerging global economic power, along with Brazil, China, India, and Russia, has accelerated the productively destabilizing effects of social changes that came with the Truth and Reconciliation Committee's restorative justice. At the same time, neoliberal policy has increased the economic divide between wealthy and poor communities. As a result, Knoetze elicits a vast range of responses and reactions from passers-by, ranging from curiosity to fear, when he costumes himself as a trash creature and wanders through the city. Each journey becomes a different environmental iteration of this broader arts practice.

During their journeys, the trash creatures "revisit the spaces of their imagined pasts—the locations associated with their material existence and the constitution of their social relations — as if walking against the consumer-driven currents of city," he explains.<sup>7</sup> Moving between desolate shipping-container yards and the bustling streets of the Bo Kaap, between concrete shopping malls and the green spaces of suburbia, their journeys not only reveal the life cycles of consumer goods but also reveal the endemic inequality and social alienation of modern Cape Town. The videos combine documentation of live performance inside wearable sculptures composed entirely from waste and found footage on issues of housing, food security, inequality and racial segregation under the *Lacrimosa* movement from European composer Wolfgang Amadeus Mozart's *Requiem* (1791–1792). The lyrics—"Lacrimosa dies illa / Qua resurget ex favilla / Judicandus homo reus" or "Mournfully be that day / On which from ashes shall arise / The guilty man to be judged"—convey the possibility for recuperating from within the wreckage that Europe released upon the world in Mozart's lifetime.

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<sup>6</sup> For a discussion of this film, see: Robert Stam, "From Hybridity to the Aesthetics of Garbage," *Social Identities* 3.2 (1997): 275–290.

<sup>7</sup> Francois Knoetze, project description for YouTube trailer (08 January 2015): [https://www.youtube.com/watch?v=04Hpd\\_cfUSw](https://www.youtube.com/watch?v=04Hpd_cfUSw)

*Cape Mongo* has been exhibited in numerous exhibitions, where it has garnered praise for its aesthetic and political achievement. “Knoetze yanks off middle-class blinkers, and forces us to confront harsh truths: that the jackboot of authority continues to crush the poor, while the wealthy remain ensconced in their barbed wire-coated bubbles, oblivious,” as critics in South Africa contextualize the videos and installation.<sup>8</sup> Another describes his affective response to the montage of found video footage that interrupts the progression of the creatures through the city and encounters with micropublics: “Using a shot of beloved Afrikaans children’s character Liewe Heksie in one snippet, and following this with a shot of a white Afrikaner beating a black man brutally on the head leaves the viewer left with a nauseating feeling of nostalgia and horror.”<sup>9</sup> Like the juxtaposition of these video fragments, the geography of the city itself is uneven and unequal with historically marginalized townships, which are legacies of racial segregation under the Group Areas Acts (1950–1991) and other Apartheid laws, located in close physical, if not visible, proximity to newly established gated communities, which are evidence of neoliberal economic policy since the end of Apartheid.

Javed’s short video *Can You Hear Me?*

(<https://www.youtube.com/watch?v=Hpsn8yE6AL0>) explores ways that viral videos can serve as a mode of politicizing debate on debates that are already politicized. The key difference between the debates that her video performs and the debates into which it intervenes is their politics. Although Canada is often praised for its model policy among settler nations towards diversity, inclusion, and equity, notably its favorable policies for refugees, it is not without its own struggles with the legacies of racism evident in “white Canada forever” sentiments that date to state films produced to recruit northern European immigrants in the early twentieth century. Canada’s National Film Board/Office national du film has invested resources and talent to correct this exclusionary nationalism, including revolutionary films such as *You Are on Indian Land* (Canada 1969; dir. Mort Ransen), which stages a protest to advocate for political rights to land for indigenous nations. Javed’s video stages a kind of protest to advocate for the political right for Muslim women to be heard amidst the cacophony of non-Muslim media and so-called experts on

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<sup>8</sup> Alexander Matthews and Sihle Mthembu, “Cape Mongo: The Tragedy of Now,” *Cue Online* by the Rhodes University Digital Media Lab (07 July 2015): <http://cue.ru.ac.za/2015/07/cape-mongo-the-tragedy-of-now/>.

<sup>9</sup> Grethe Koen, “Cape Mongo – The Best Thing I’ve Seen at Fest,” *Channel 24* (09 July 2015): <http://www.channel24.co.za/News/Local/Cape-Mongo-the-best-thing-Ive-seen-at-Fest-20150709/>.



Islam, who alter ways that we see the world. Her video might be seen as an adaptation or updating of Edward W. Said's analysis of the lingering orientalism in western media coverage of the Iranian Revolution, as well as Lila Abu-Lughod's analysis of the imperial imperatives in assumptions that Muslim women need "saving."<sup>10</sup>

*Can You Hear Me?* poses a series of complex questions through different iterations of a single, ostensibly simple, question: how long are you willing to listen to a Muslim woman? The 2.66-minute video is composed of scenes featuring a young woman, performed by actor Nawal Salim, asking whether she can be heard. Dressed at times with her face and hair covered in niqab, face uncovered and hair covered in hijab, or face and hair uncovered, Javed's character asks whether her voice can be heard over what her clothing is imagined to say. She looks around and indicates groups of people who can either hear or not hear her with each change in her clothing. In predominantly non-Muslim yet culturally heterogeneous places like the Toronto suburb of Mississauga, what a Muslim woman wears is often understood to say more than what she might say through words or actions. The young woman contemplates why particular neighbors can only hear her voice when she wears or does not wear particular items of clothing.

Her video asks us to think about our preconceptions that might inadvertently silence the perspectives of Muslim women. It also evokes the struggle for democracy in Canada, where a Québec judge refused to hear the case of Rania El-Alloul because she was in hijab and the Canadian state has put forward measures to ban niqab at citizenship ceremonies. Other democracies with similar policies and practices that silence Muslim women include France, Switzerland, and the United States. Stated differently, Javed's video asks us to contemplate which voices are heard under so-called democratic systems of political representation. Uploaded to YouTube, the video has been promoted via social media, such as Facebook groups and Twitter feeds, as well as community media, such as *South Asian Focus* and *The Mississauga News*. As an artist and advocate, Javed has also questioned the practice of separate prayer areas in a local mosque for male and female worshippers.<sup>11</sup> She relocates ongoing effects of our increasingly globalized politics within

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<sup>10</sup> Edward W. Said, *Covering Islam: How the Media and the Experts Determine How We See the Rest of the World* (1981; rpt. New York: Vintage, 1997); Lila Abu-Lughod, *Do Muslim Women Need Saving?* (Cambridge: Harvard University Press, 2013).

<sup>11</sup> Shazia Javed, "Letter to an Imam," *Masjid Development Network* (08 July 2015): <http://masjidnetwork.net/a-letter-to-an-imam-by-shazia-javed/>.



the everyday local of daily habitats, whether attending a Ramadan prayer in person or looking online for news from home.

### **Intertwining computational and biological**

As insurgent practices of political new media projects, environmental iterations and habitat-making require a dynamic engagement between the computational and the biological, often separated into unproductive binaries, with the former figured as a stellar achievement in human agency and ingenuity, and the latter viewed as immutable, outside and beyond the human. Habitat-making in new media art suggests an aesthetic/political strategy of intertwining and interweaving the computational and biological to problematize and disturb these often destructive binaries. Rather than operating within a strictly interventionist activist mode, these new media projects refuse the divide between the computational and the biological to produce a series of unsettling, recalibrations, and reimaginings. These projects occupy a discomfiting liminal zone between the two polarities. This section examines Kuesti Fraun's *Capacities* (Germany 2011), Leah Shafer's *Declaration of Sentiments: Wesleyan Chapel* (USA 2015), and Ben Grosser's *Computers Watching Movies* (USA 2013)—all of which ask us to become aware of the intertwining of computation and biological in our digital habitats.

#### *Capacities*

(<https://dl.dropboxusercontent.com/u/26297963/CAPACITIES.mp4?dl=1>) is an ultrashort that comments upon the everyday ways that we refuse to acknowledge the vast amounts of consumer waste that we produce each day. The short scenario unsettles our faith in the capacity of sanitation departments and companies to keep pace with our increasing in robust output of unsorted and unrecycled waste. In less than nine seconds, the video tells a story that is uncomfortably familiar, even in ecologically astute places like Germany. The scene is a city street corner. The mise en scène establishes the performativity of the ecological. Pink flowers cascade from five-story concrete apartment building balconies. A street sign occupies the center of the image: Joachimstafze. Signage for parking and for a bike lane suggests not only metropolitan environmentalism but state-motored nods to environmental impulses. A small red garbage receptacle is suspended on a post, but at first, we might read the image as a mailbox. Dressed in a black baseball hat and black coat, his face obscured, a man carries a single aluminum can. He places it in the

red box, which explodes from the bottom, releasing a small pile of cans that cascade down onto the pavement, doubling the cascades of flowers hanging from the apartment balconies. The video recuperates the brevity of gag films in the so-called primitive cinema of the late nineteenth-century, such as the Lumières brothers' *L'Arroseur arrosé/The Sprinkler Sprinkled* (France 1895), toward environmental contemplation of the contradictions of modern urban life.

*Capacities* mobilizes a series of conceptual comedic inversions of dialectical contradictions on the theme of screen ecology habitats. As a single shot film, it references early cinema's tableau aesthetic with a stationary camera in wide shot. Yet it pushes the viewer to GIF-ify the experience through repeated viewings that make a hand-activated loop through pressing play. The video evokes pithy GIFs shared through social media. It also evokes early modernist painting with its composition composed of a series of boxes: flower boxes, square signage, garbage receptacle, buildings, and street. Only the man dressed in black moves in this habitat of concrete apartment buildings and parked cars. Marshaling a modality of concealing and revealing, a trope of classical Hollywood narrative structures, *Capacities* looks simple and primitive but actually layers complex ecological ideas by staging contradictions. A man moves but the parked cars do not. Sunlight spills on the left side of the frame but the right side is dark. The man holds one can, but when inserted in the garbage bin, it opens from the bottom to splay out many cans, evoking of the one-to-many relationship of systems analysis. Distant car sounds, barely audible, contrast with the percussive cacophony of many cans hitting the pavement below the red box. The idea of ecological urbanism as a concept butts against the everyday, mundane process of disposal of a can. *Capacities'* larger dialectical inversion juxtaposes the conceptual idealism of the ecological with the materiality of the urban spatial habitat, demonstrating the small stagings of the ecological within the built environment, the computational capacities of online video shorts with the biologies of plants and refuse.

*Declaration of Sentiments: Wesleyan Chapel*

(<https://vimeo.com/leahshafer/sentimentswesleyanchapel>) is the third in a series of videos by Shafer that explore the *Declaration of Sentiments* (1848), which announced a movement for the civil, social, political, and religious rights of women in the United States. The film explores the historical habitats of U.S. feminism as composed of space, words, computer technologies and editing systems, and agency. The video plays with the notion of

architecture as a historiographic habitat that is both static and moving, computational and biological. It also stages a feminist historiography by insisting that history is composed of multiple temporalities and polyphonic voices. The video deconstructs the idea of the stasis of historical monument with the camera constantly moving and panning in the space and the agency of fractured images layered on top of each other to fashion a new architecture of computational, layered feminist praxis. The video unleashes multiple voices, multiple screens, multiple histories as simultaneously continuous and discontinuous, the contradictions of history that provoke change.

The soundtrack is composed of multiple non-actors reading parts of the *Declaration*, some deadpan, others trying to emphasize words, a polyphony of contemporary female and male voices with a slight echo, indicating the words were uttered in the spaces we see on screen and underscoring the living biology of humans speaking. These voices are disembodied, ethereal yet grounded, suggesting the ghosts of the past live resolutely in the present. The images explore the inside of the chapel, probing its ceiling, wooden floors, walls of windows, pews, empty of people but flooded with light. The wall of windows white-out with light, referencing art cinema strategies of blowouts and inability to balance insight and outside light readings. These whited-out windows also evoke the ghostly specters of early nineteenth-century feminists that haunt the space. The video charts a historiographic notion of inside living outside, and history rippling through the present.

Authored primarily by Elizabeth Cady Stanton as a feminist iteration of the U.S. *Declaration of Independence* (1776), the *Declaration of Sentiments* was signed by 68 women and 32 men at the Seneca Falls Convention, which is now considered the first women's right convention in the United States. The video is an experimental documentary in which a diverse group of voices speak the words of the *Declaration of Sentiments* in the Wesleyan Chapel in Seneca Falls (New York), where the *Declaration* was first read, to explore presences and absences of agency within historical spaces through computational strategies of fragments, repetitions, decentering, and layered visual collage. Videos from Shafer's ongoing *Declaration of Sentiments* project have been screened as installations at the Gould Hotel and the Women's Rights National Historical Park, both in Seneca Falls, not far from where she teaches, emphasizing the local as an important node for the computational and biological, here figured as the biologies of space, region, digital

technologies, and people. This iteration of the project embraces feminist visual praxis through fragments, decentering, and repetition.

Through the affordances of digital editing software to move and layer images, *Declaration of Sentiments: Wesleyan Chapel* tears apart the idea of a unified realist screen—so sacred in classical Hollywood and international art cinema style—as a patriarchal form. Instead, it proposes that the multiplication and layerings of screens represents a feminist historiographic intervention into phastamatic patriarchal and state unities. The film starts with tableau image of the brown wood podium in the chapel paired with a digital camera on a tripod, suggesting that the podium of the nineteenth century has mutated into a twenty-first-century podium of the digital camera, where both engender, literally and figuratively, a feminist computational modality, both technologies with political affordances to intervene into habitats. Podium and camera pose as instruments of feminist speech and political agency. The project is particularly provocative in light of the erosion of women’s rights across the globe alongside the possibility of the first female (if not feminist) U.S. president during the first decades of the twenty-first century.

*Computers Watching Movies* (<https://vimeo.com/78711521>) visualizes what a computational system “sees” were it to screen iconic scenes from the popular Hollywood hits *2001: A Space Odyssey* (1968), *Taxi Driver* (1976), *Annie Hall* (1977), *The Matrix* (1999), *American Beauty* (1999), and *Inception* (2010). Grosser’s original software combines computer vision algorithms and artificial intelligence routines that allow the computer a degree of agency in determining which clips it would like to screen. The project produces a series of temporal sketches, which are presented with the audio from the original clip, prompting viewers to reflect upon their own screening process of selecting and recombining details from visual images in ways that are personally and socially meaningful. Ghost images of Hollywood conventions in framing shots also emerge under the sound of highly orchestrated musical scores and contrived dialogue. In short, the machine act of looking becomes an occasion for us to reflect upon the human act of looking. The project invites us to consider how we train the AI in our smart devices in ways the might transform human prejudices into algorithms for bots, something that made

headlines when Microsoft's Tay, an AI chatbot, started to tweet racist and sexist messages within hours of its release to the public.<sup>12</sup>

*Capacities*, *Declaration of Sentiments: Wesleyan Chapel*, and *Computers Watching Movies* offer different strategies for thinking through the intertwining of the computational and the biological as a zone of liminality, an in-between space of possibilities. *Capacities* asks us to consider how the computational screen conceals the biological. *Declaration of Sentiments* proposes that the biology of those feminist activists who are no longer alive can be reanimated through the computationally rendered multiple screens. *Computers Watching Movies* renders analog cinema as a biological trace, a visual DNA, through the computational. All three projects operate as laboratories to simultaneously combine and then pull apart the intertwining between the computational and the biological.

### **Virtual and imaginary mapping of new geographies**

Space is as a central a topic in the digital arts as it is in analogue arts. Just as artists in the past, contemporary artists working with electronic technologies find in spatial codes and metaphors compelling lenses from which to approach changes and shifts in representing and comprehending territory, and thus speak about what these shifts may mean. This section examines Chiara Passa's *Live Architectures* (Italy 2014–present), Mauro Ceolin's *Spore's Ytubesoundscape and His Wildlife* (Italy 2010), and **Banu Colak's *The New Empire* (Turkey/UAE 2014)**, all of which are projects addressing newly created spaces—augmented reality (AR) over virtual maps, an online world that replicates biological evolution, and a new nation-state in a new era of empire, respectively. Together, they remind us that mapping, geography, and architecture, are concepts and forms that both reflect and shape the way we organize and imagine community, and thus construe individual and social identity. Articulated through diverse media and platforms, these projects share understandings of media as newly emerging cultural and social formations of space that are increasingly delocalized and globalized. Yet they also diverge in their conception of digital habitats. One project proposes them as conduits for the democratization of culture, whereas others take more ambivalent attitudes, expressed through simulations attuned to the loss of biological life and environments on a global

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<sup>12</sup> "Microsoft 'Deeply Sorry' for Racist and Sexist Tweets by AI Chatbot," *The Guardian* (26 March 2016): <https://www.theguardian.com/technology/2016/mar/26/microsoft-deeply-sorry-for-offensive-tweets-by-ai-chatbot>.

scale. Passa and Ceolin meditate on digital layers added atop virtual spaces, whereas Colak reflects on the overlapping mental and physical landscapes of memory and history.

*Passa's Live Architectures*

(<http://www.chiarapassa.it/GoogleEarthExtemporaryLandArt.html>) is a series of site-specific, interactive projects mixing mapping (Google Earth) and augmented reality technologies. The series includes manipulations of the simulated spaces of Google Earth realized by introducing shapes and volumes that strike as comical because they draw attention to Cartesian geometry imposed onto the environment in numerical coordinates carry scientific approval as unbiased and objective. In “Augmented Forces on Google Earth” (<http://www.chiarapassa.it/AugmentedForcesOnGoogleEarth.html>), Passa reshapes the underwater spaces of the Ostia Sea by adding square rings instead of the expected circles. In “Augmented Sky-trip on Google Earth — The Strawberry Ice Storm” (<http://www.chiarapassa.it/AugmentedSkyOnGoogleEarth.html>), she explores the Google’s fly-through app via a storm of strawberries, each shower in an ice cube. Passa’s “square” landscapes and their evocation of Pop and Psychedelic aesthetics obliquely reference hippie sensibilities, reminding us that notions of simulation intertwines with the hippies’ quest for “expanded consciousness.” Beyond LSD-infused trips, the latter indicates the belief that computers would lead to the formation of a global consciousness (a “noosphere” or a “global village”), as the eradication of physical distance was understood to ultimately produce social change by way of cultural exchanges and open communication.<sup>13</sup> Passa asks “audiences to confront their own assumptions in response to liquid spaces, liminal areas, and internet interfaces that confront boundaries between the inner and outer worlds.”<sup>14</sup>

In this vein, *Live Architectures* is also part of Passa’s broader interest in using digital technologies to democratize art. Moving away from institutional control of curatorial spaces, thereby public accessibility is one of the major themes shaping her arts practice, including animations, interactive video-installations, site-specific digital art in public

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<sup>13</sup> Teilhard de Chardin’s “noosphere” and Marshall McLuhan’s “global village” are influential precursors for countercultural articulations of computer-aided communication and communities in the 1960s and 1970s. According to de Chardin, the noosphere represents the third phase of Earth’s evolution, consciousness or a global mind produced by human interaction, following on the geosphere (inanimate matter) and the biosphere (biological life). The global village denotes the notion that developments in media such as instantaneous movement of information are leading to greater cultural exchanges and interconnections, potentially creating more involvement with others and bringing about heightened global awareness and responsibility. Among others, Howard Rheingold (“virtual communities”) and Stewart Brand (The Whole Earth Catalogue and the WELL), are notable figures championing computer-aided communication as a means to create a unified global consciousness. Brand was influential in helping develop the MIT Media Lab. The Aspen Movie Map was an early project of the Architecture Machine Group, the Lab’s early precursor.

<sup>14</sup>Chiara Passa, artist’s statement (no date): <http://www.chiarapassa.it/GoogleEarthExtemporaryLandArt.html>.

spaces, video-mappings, video-sculptures, and most recently The Widget Art Gallery, a web-based app whose gallery hosts monthly, curated digital art exhibitions. Beyond this utopian ring and alongside similar projects, the artist's remapping of Google mapping technology itself also shows just how much our virtual imaginary is dehistoricized—and how transnational corporations like Google act as modulate movements and connections between publics and worlds.

Even if unknown to them, contemporary artists using Google mapping software are following on the steps of the *Aspen Movie Map* (1978), a project at MIT realized by an interdisciplinary team including the cinematographer Michael Naimark. Cited as one of the earliest example of hypermedia, the *Aspen Movie Map* consisted of a touchscreen, viewer-controlled drive-through of Aspen (Colorado), United States. The project pioneered basically all of the features of street view and other mapping services today, including navigation buttons for turning and moving, integration with flat maps and aerial photography, computer-generated panoramas, and 3D models of buildings. While efforts were made to commercialize the technology, street views remained mostly a purvey of artists until the 2000s when Google and other companies worldwide, including City8 (China), Everyscape (United States), and Location View (Japan), began launching it as a product. As cheap computer power and storage, as well as the World Wide Web made “proxy” travel practical, street view also inadvertently provided artists with ready-made, free materials, “galleries” and potential for globally dispersed publics. Passa's *Live Architectures* interrupts expectations of seamless correspondences between digitally rendered representation in street view and the physical world. She inserts antirealist map-icons to subvert techno-utopic fantasies of information's democratization via networked media, which can appear as ineffectual as a hippy's LSD trip in bringing about social change.

*Spore's Ytubesoundscape and His Wildlife*

([https://dl.dropboxusercontent.com/u/2789298/PDF/001\\_VEspore.mp3](https://dl.dropboxusercontent.com/u/2789298/PDF/001_VEspore.mp3)) re-purposed audio effects posted on YouTube by players of the popular online multiplayer fantasy god-game *Spore* (2008) by the videogame developer EA Maxis. Designed by Will Wright, who also designed *The Sims* (2000–present), *Spore* consists entirely of so-called user-generated content, in this case generated via tending to a quasi-Darwinian life simulation that begins with microscopic cells that develop over time into social organisms, including tribal forms



and empires, and culminating with creatures exploring outer space. While providing a game that puts the player in control, Maxis actively promotes, monitors and crafts community within and around the game through a variety of means, including partnering with YouTube, now a Google company, to create the Spore YouTube Channel, which encourage players to post videos of their creatures' activity. Community is crucial to the game's success and to Maxis' and Will Wright's reputation for "creative innovation." Ceolin appropriates and collates sounds from player-generated clips of *Spore* on YouTube, to create a soundscape that, albeit entirely simulated, registers as "natural" in the sense of being recognizable as a birds chirping, cats roaring, and so forth.

The artist relates that the soundscape "conveys the living virtual environment of a game world, where new species emerge daily, in contrast to our own environment, where species extinction now occurs in catastrophic proportions," which "prompts us to think about the mediation of 'wildlife,' some species of which exist only as DNA samples in archives or living samples in zoos after human destruction of their habitats and the planet as a whole."<sup>15</sup> To these points, *Spore's Ytubesoundscape and His Wildlife* can be understood as an attempt at speaking about recent shifts in the ways we think about ourselves and others in our environments, as well as the roles played by information technologies and industries within these shifts. Ceolin is interested in inquiring into the instrumentalization of communication under the logic of informational capitalism, with communication here defined as both social process and play. Like *Live Architectures*, it asks us to think about our everyday digital practices. What is at stake when community is chiefly valued as an economic resource? And what are the implications of subjecting life itself to a similar logic?

*The New Empire* (<https://vimeo.com/139161473>) is a split screen projection of two liquid environments overlaid by electronic music, suggesting the sound of blowing winds. On the left side, the image is a close-up of pieces of broken glass, which contain fragments of maps, along an otherwise unpopulated and muddy shore. The glass shards appear like the ruins of a shattered globe. On the right side, the image of a solitary tower appears amidst the reflections of other towers on rippling water. The architecture evokes jagged spires on Gothic cathedrals, metallic structures of Tatlin's Tower, and bold architecture of Gulf cities like Dubai, Doha, and Abu Dhabi. A circular image combined the two images in a

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<sup>15</sup>Mauro Ceolin, email to authors (June 2015).

kaleidoscope-effect at the upper intersection of the two screens, evoking a dizzying 360-degree view of urban landscapes from the perspective of someone on an imaginary observation platform.

The effect is rather abstract, leaving us with Colak's definition of the project as a visual mediation on the concept of the nation-state, a poignant topic for a Turkish artist given Turkey's tortured histories of transitioning from a crumbling empire that once reached down into the Gulf into a developing nation-state and presently an emerging economy. Colak notes that the concept of nation-state defines spatial boundaries, along with individual and collective identities, despite its historical "fragility and ephemerality."<sup>16</sup> Accordingly, one side of the video indicates her preoccupation with the transience of nation-states (and empires), which is visually evoked by the swelling tide that eventually submerges and carries away the cartographic images of borders and identities. The other side of the video reflects her present dislocation, as a Turkish resident of the United Arab Emirates (UAE), and her impression of this relatively new state, here symbolized by a shimmering shape of a high-rise on the water. As the artist puts it, the form of these landscapes, "fragmented, changing, and manipulated," echo the underlying idea, that "personal and collective narratives of identities" must be seen in reflection, as "not static but multilayered and dynamic."<sup>17</sup>

The Republic of Turkey was founded as a compulsory modern and secular nation-state under its first president Mustafa Kemal Atatürk between 1923 and 1938. Praised as democratic, modern, and secular by eurocentric standards, vestiges of the Ottoman millet system that protected minority populations return in fissures within the Turkish republic. By contrast, the United Arab Emirates (UAE) is a federation of hereditary emirates that were once characterized as unruly part of the Ottoman Empire.<sup>18</sup> Often characterized as "an autocracy with the sheen of a progressive, modern state," the UAE challenges European assumptions about political organization and state welfare.<sup>19</sup> Dubai in particular has served as a lightning rod for accusations and refutations. While nation-states shatter

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<sup>16</sup> Banu Colak, email to authors (June 2015).

<sup>17</sup> Banu Colak, email to authors (June 2015).

<sup>18</sup> Frederick F. Anscombe, *The Ottoman Gulf: The Creation of Kuwait, Saudi Arabia, and Qatar* (New York: Columbia University Press, 1997); David Commins, *The Gulf States: A Modern History* (London: I.B. Tauris, 2012).

<sup>19</sup> For an introduction to recent scholarly debates on the Gulf emirates, see *Globalization and the Gulf*, eds. John W. Fox, Nada Mourtada-Sabbah, and Mohammed al-Mutawa (New York: Routledge, 2006); *The New Post-oil Arab Gulf: Managing People and Wealth*, eds. Nabil A. Sultan, David Weir, and Zeinab Karake-Shalhoub (London: Saqi, 2011); and *The Transformation of the Gulf: Politics, Economics, and the Global Order*, eds. David Held and Kristian Ulrichsen (New York: Routledge, 2012).

into civil wars—and even ancient nations crumble into fragments, Dubai has become a model for interracial and interfaith tolerance, albeit with social inequality, that has not been seen since Al-Andalus/Andalusia before the fall of Granada in 1492.<sup>20</sup> The UAE neither accepts nor rejects entirely the European model of nation-state, drawing upon other modes of polity that include tribal and religious codes. The Gulf emirates have witnessed the arrivals and departures of numerous empires from the Ottomans to the Portuguese and British—and presently the decentered empire that Michael Hardt and Antonio Negri describe as largely controlled by the United States.<sup>21</sup>

More concretely, the project reflects Colak's interest in translocation, a term that both denotes a change or movement of location, as well as a biological concept for mutations that develop when a segment of genetic material from one chromosome becomes heritably linked to another chromosome. Translocation frames *The New Empire's* themes, evoking both the artist's personal migratory movements and popular notions of cultural diffusion based on biological metaphors. It expands Richard Dawkin's notion of memes. Recalling Dubai's historical role as a node within a network of free ports (often mischaracterized "pirate stops" to legitimate British colonial rule), Colak's project imagines geographies poised between the dissolution of the nation-state as a viable form of polity and the inauguration of emerging cultural contours of what she deems the new empire. Her project understands identity within liquid modernities that evoke the constructivist-inspired forms of Zaha Hadid's architecture wherein locations of inside and outside collapse to reveal perspectives as multitudes. *The New Empire* is an elegy for fallen empires and increasingly antiquated nation-states that underscores the longevity and resilience of a natural world, which lives beyond the lifetimes of our human empires.

### **Speculations**

Collectively, the new media projects analyzed in this essay convey a sense of the variations of approaches to thinking about digital habitats across multiple screens, and to the active making and construction of new environmental iterations. All of these works invoke and reference the environment as a lived place open to engagement and intervention, a space that refuses binaries between the natural and the built, the human and nonhuman

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<sup>20</sup> Robert J.C. Young, "Postcolonial Remains," *New Literary History* 43.1 (winter 2012): 19–42.

<sup>21</sup> Michael Hardt and Antonio Negri, *Empire* (Cambridge: Harvard University Press, 2001).

(including machines), the lived material world and the immaterial realm of code.

These works refuse to figure the habitat as singular, constant, independent, and habitual. Instead, they propose the digital habitat as multiple, unstable, contingent, and sometimes estranging, a liminal zone of environmental iterations mobilized by minor mutations in code, design, space, place, interface, communities, geographies, and identities in flux. These projects also speculate on ways to imagine new habitats through different iterations of possibility. They formulate networked cinema as an active process of digital habitat-making. In this dynamic zone, the primacy of singular films or screens mutate into multiple screen worlds that activate new conceptualizations of what constitutes the environment, our place in it, and our responsibilities towards it.