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# The Trauma Machine: Demos, Immersive Technologies and the Politics of Simulation

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**This essay critically examines digital simulation scenes or “demos” as a tool that is telling something about the truth of the world with the aim of making it unstable. Following Farocki’s take on war trauma therapies treating post-traumatic stress disorder (PTSD) with responsive and immersive technologies, it makes the effect of a demo on human subjectivity apparent. From there, the essay traces the design of these technologies back to the first video simulation experiments of the Architecture Machine Group at MIT in the 1970s: the Aspen Movie Map, in which race and gender play a critical part in conditioning spectatorship. Looking at the role of demos in urban planning, the implications of this tool become fully visible.**

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## Immersion into Trauma

In his video installation *Serious Games* (2011), filmmaker Harun Farocki cuts onto four screens different scenarios ranging from recent wars and war games. In the longest segment, entitled *Immersion*, we see a soldier undergoing a therapy for post-traumatic stress disorder. He relives the memory of the killing of a fellow soldier during the Iraq war via virtual reality headgear. The uncanny feeling of these scenes is that the software used in the pre-battle training and the post-trauma treatment are strikingly similar (fig. 1).

In its multi-screen architecture, the installation most strenuously insists on a disjuncture between the camera apparatus and the human eye. Vision, for Farocki, is an activity beyond and outside of the human subject. It is a product emerging from the realm of machines and apparatuses of capture, one that retroactively conditions and manufactures “human” vision. At the limits of his analysis is the possibility that vision—at least in the human capacity to survey—is impossible, even as the ability of machines to record, store, memorialize, and reenact images has never been greater. More critically, it would appear that machinery is capable of rewiring the human brain. What Farocki addresses is that our very vision and cognition are now thoroughly mediated. Vision has become in many ways mechanized, perhaps even *inhuman* in being unable to recognize human subjectivity.



[Figure 1] Harun Farocki, *Serious Games I–IV*, 2001.

Within this moment of electronic repetition, where the soldier returns to a past trauma through the implantation of new memories, Farocki shows the nature of contemporary mediums as affective, preemptive, and inhuman. Miming the logic of contemporary prolonged exposure therapies, trauma here is not created from a world external to the system, but actually generated, preemptively, from within the channel between the screens and the nervous system.

In prolonged exposure therapies, the same effect is produced in a similar way: sufferers of anxiety and trauma disorders are “exposed,” most recently through virtual reality environments, to revisit moments in which the patient associated a particular stimulus to a response. As Marisa Renee Brandt makes

clear in her work on virtual reality exposure, the function in these treatments is not to “relive” the past but to “revisit” it in order to recondition and disassociate the stimulus from the response (Brandt 2013, 8). This exclusion of “reliving” is telling. The function of the therapeutic immersion in the videogame has no relationship to life narrative or stories, nor is it aligned to any teleological, historical, or memorial time. It is literally a repetition, a return visit that will be the same as the initial “visit” in the war zone. The literature is specific on this point. Prolonged exposure therapy is behaviorist: it is grounded in the earlier twentieth century work of Pavlov on animal conditioning and is linked today to neurochemical models of the brain (VanElzakker et al. 2014, 3–18; Gallistel and Balsam 2014, 136–144).

The scholarship on traumatic and anxiety disorders has a curious relationship to repetition automatism in psychoanalysis, in that it vehemently insists on a model of the mind analogous perhaps to Freud’s initial ruminations in “Project for a Scientific Psychology” (1895). What makes contemporary therapies different is that they never pass through the conduits of egos or consciousness. The brain is comprised of circuits of neurons that are now postulated as being chemically conditioned by stimuli. The point of therapy is to modify the responsiveness of the circuit at a neurochemical level and to rewire it. Prolonged exposure therapies are not based on talk and do not invoke notions of dialog or narrative. Within this model of the brain, the trauma is the result of a communication problem or conflict between different regions or layers of the brain.

As studies comparing rat and human response demonstrate, the conditioning reflexes are presumed to result from amygdala. The amygdala is considered to be a “primitive” structure in the brain responsible for instinctual responses: the “lizard” part of the brain. As the common parlance describing this structure demonstrates, the amygdala can also be considered a cross-species and therefore globally shared structure in the brain. The “non-human” and “globally” shared part of the brain conflicts and cannot communicate seamlessly with the portions of cognitive reasoning and emotion. Scientists postulate that these conditions can happen very quickly and they may happen even at sub-neural and molecular levels of brain cells (Gallistel and Balsam 2014). What makes contemporary post-traumatic stress disorder (PTSD) interesting is that scientists speak about these impulses as open to computationally modeling. The idea of video based therapy is that the function of the screen is not to provide historical memory, content, or meaning, but to simply divert the flow of signals and re-channel them into more productive rather than conflicting circuits (Gallistel and Balsam 2014). As Pasi Vailiaho (2012) has brilliantly demonstrated the screen, in such therapies, serves no anthropocentric or even representative function, but is a channel to network nervous impulses into new circuits of coordination with machines and media.

## A History of Machinic Vision

Behind Farocki's installation lurk serious questions of what it might mean to even "see" or "witness" the suffering of others in our contemporary age. What are the conditions for visibility and legibility within any historical milieu? But also: how is one to face this new neuro-optical apparatus? How can critical practices intervene in this seemingly smooth multi-channel network where emotional pain, nervous stimulation, and visual perception are seamlessly integrated to condition human beings? When the world is a demo, what does it mean to encounter the reality of human suffering?

Farocki's films, of course, speak to a very long history in critical media and film studies that has insisted on the disjuncture between the camera apparatus and the human eye and mind (Silverman 1996: 125–131). But Farocki, in cleverly recognizing the very specific nature of digital and computational warfare, asks about a machinic vision that goes beyond being capable of autonomously recording, and is gifted with powers of cognition, analysis, and simulation.

Farocki's concern about seeing in the face of an apparatus for automating not only vision but also cognition (very literally if we think of rewiring minds to not suffer or preemptively suffer trauma) speaks to our present. In this essay my proposal is to address the question of what is historically specific to the contemporary forms of image making and to further ask how these practices inform future imaginaries and possibilities for both art and politics under conditions where both vision and trauma are increasingly automated and technicized. If both Farocki and neuroscientists stress a form of vision whose gaze is fundamentally irreducible to the human body, then I argue this is also a particular historical statement.

In this essay, I will address how machinic vision is constituted in our present, by retracing the history of immersive technologies and examining in particular the case of the Aspen Movie Map, and its predecessor projects, created by the Architecture Machine Group founded by Nicholas Negroponte at MIT. The Aspen Movie Map is largely considered one of the first fully immersive, perhaps responsive environments, and is widely touted as the predecessor to everything from first person shooter games to Google Earth. As we shall see, the designers and scientific theories that developed the Aspen Movie Map in 1978 were as insistent as Farocki on affirming the inhuman nature of visual perception.

Not surprisingly, race and gender play critical roles in conditioning spectatorship within this architecture. The Architecture Machine Group prototyped its conception of interactive and immersive media by engaging with race as a "demo" for the production of future responsive environments. In merging the representation of race with the science of machines, the final effect is to insist

not only on the limits of human vision, but to produce new ideas of species and territories, literally linked through nervous stimulation and speculation: a new neuropolitical situation that goes beyond the original biopolitical formulation of subject and population. Population, here, is not the target but rather the constituent of media. However, this is a population which is no longer comprised of individual subjects but of units of attention and nervous actions: what, to cite Deleuze (1990), we might label “dividuals.”

## The Aspen Movie Map

Arguably one of the most important models for the contemporary responsive environments and virtual reality therapies, like the one in Farocki’s *Serious Games*, is historically the Aspen Movie Map (fig. 2). Built through the careful survey of gyro-stabilized cameras that took an image every foot traversed down the streets of the city of Aspen in Colorado, the Aspen Movie Map was a system working through laser discs, a computer screen and a joystick that allowed a user to traverse the space of the city at their leisure and speed.



[Figure 2] The Aspen Movie Map, Architecture Machine Group at MIT, 1978–1979, <https://www.youtube.com/watch?v=Hf6LkqgXPMU>.

The film was shot both forward and backward, so one could navigate in reverse, and it was possible also to place objects into the space. The effect, Negroponte said, was to have as many recorded images as possible so that to produce a seamless experience (Mostafavi 2014). Upon looking at the screen, the viewer was both “there” in Aspen and “abstracted” from Aspen. The subject was both integrated into the space, while simultaneously being trained to navigate space as manipulable and scalable. The perceptual field was plastic in being able to expand temporally and spatially both the bird’s eye view and that from the ground. Arguably, navigating these scales and planes was a new

form of perceptual training, while preserving older skills of orientation and command over space.

Originally the Aspen Movie Map was commissioned by the Cybernetics Division of the Defense Advanced Research Projects Agency (DARPA) of the US military. Inspired by the use of a simulated environment by the Israeli army in the rescue mission at the Entebbe airport in Uganda in 1976, DARPA's plan was not to just build a fake environment, but to simulate one with the purpose to pre-implant geographic knowledge and cognitive maps into soldiers before entering the real locale of combat. For Andrew Lippman, who was the director of the project, the main function of the Aspen Movie Map had, however, no geographical purposes. Instead, it was solely about developing more interactive environments and to try out the emerging technologies of video discs, high resolution storage and replay systems.<sup>1</sup>

The project was not classified as secret by DARPA, which speaks to a larger issue: Even as counter-terrorism and urban warfare had become a pressing issue by the 1960's, for instance with the conflicts in Algeria and Vietnam, there was also a different war going on. The urban riots of the late 1960's sparked by Martin Luther King's assassination, and the increasing tensions as white Americans fled urban areas, had prompted a new discourse of "war" and "crisis" in U.S. cities.

Historian Jennifer Light (2003) has shown that this discourse of "crisis" was coproduced with an influx of defense intellectuals leaving the analysis of nuclear strategy to apply their research and cybernetic methods to the increasingly profitable sector of urban security and development. By the 1970's, however, as Aubrey Anable has argued, the urban "crisis" had dissipated or dissolved. It was replaced by a new Nixon administration investment in privatized solutions and a turn away from Johnson era's Great Society style programs. This privatization, she argues, refracts itself in the movie map's hyper-individualized mode of traversing urban space (Anable 2012, 512–514). Certainly, the movie map was part of a longer tradition at MIT of three decades of investment in behavioral and computational sciences within the schools of planning and architecture. As a result, planners from MIT did not answer even the original "crisis" with a turn to sociology or structural discourses. Rather they had long been mobilizing the tools of environmental psychology, communication theories, cognitive science, and computer science (Halpern 2014, Chapter 2). The Aspen Movie Map was the first responsive environment and a new way to negotiate space across the seeming ruins of modern urbanity.

1 I interviewed Dr. Andrew Lippman on 25 November 2014 at the MIT Media Lab. The background of the movie map in relationship to DARPA is also discussed by Michael Naimark 2006.

## Demo or Die: Prelude

What historically distinguished the Architecture Machine Group's approach, was the lack of a vision of the future. If throughout the nineteenth and twentieth century designers and urban planners from Le Corbusier to members of the Bauhaus had produced utopian forms of urban design, the Architecture Machine Group had a different method—the demo. At MIT the focus was never on final outcomes but on performance and process.

This approach could best be summarized in the “Demo or Die” adage (that was born at the MIT Media Lab). The construction of simulations was part of a process whereby the environment and the user would be adjusted to one another, and eventually the simulation itself would be dispensed with. The Media Lab made the distinction between simulation and this “responsive architecture”<sup>2</sup> by designating everything a “demo” (Sterk 2014). The “demo” is a test, a prototype, and as such neither a representation of the real world nor a finalized reality in itself. It hangs in an anticipatory, or preemptive time of anticipation for the next technical development.

In a book by computer evangelist Stewart Brand (1987), the Media Lab is described as a place where corporate sponsorship and creativity exist in perfect harmony. The lab is depicted as a “techno feast of goodies” to improve human life with projects such as “School of the Future,” “Toys of the Future,” and so forth. This apocryphal vision of the future, Brand argues, is not based on mythologies of knowledge or the academic way of life “publish or perish,” but rather grounded in a new vision of truth and prediction.

In Lab parlance it's “Demo or Die”—make the case for your idea with an unfaked performance of it working at least once, or let somebody else at the equipment. . . . The focus is engineering and science rather than scholarship, invention rather than studies, surveys, or critiques. (Brand 1987, 4).

This idea of demo which is demonstrating the future direction of technology, and telling something about the truth of the world and what users need, was the particular mark of the lab.

## Demo or Die: In Boston's South End

The world was not, of course, always a demo. As Molly Steenson (2014) has shown the Architecture Machine Group's effort was also to integrate computing into architecture. Initially, the Architecture Machine Group conceptualized the human-machine interaction in terms of conversation and not immersive

2 The term “responsive architecture” was coined by Nicholas Negroponte and is now arguably expanded in many schools of architecture and design to “responsive environment.”

interaction. Models of language, translation, and representation predominated in conceiving machine and design learning. While the first efforts at computer intelligence adhered to models put forth by Marvin Minsky and Samuel Papert, for instance, very quickly, having demonstrated the failure of such approaches, the Architecture Machine Group turned to more cybernetic ideas, and to inverting the question for intelligent systems. Instead of asking whether machines could be made like people, they turned to asking how people are machine like, or more correctly, perhaps how people can become part of machine systems.

Interestingly, in moving from machine to human intelligence, race was a critical conduit of passage. The first full-fledged demo of human computer aided design run by the Architecture Machine Group was a series of Turing-inspired tests (also known as the Hessdorfer Experiment) done on tenants in Boston's then under-privileged neighborhood of the South End. There, three African American men were recruited from a public housing project and asked to type on a computer keyboard what their main concerns were regarding urban planning and neighborhood improvement, and what they wished urban planners and designers would take into account (fig. 3).



[Figure 3] Nicholas Negroponte, *The Architecture Machine*, 56.

Importantly, the simulation was entirely fake. Computers, at the time, could not handle such sophisticated questions. The test was run through a human being hidden in another room (lower right-hand corner of image). The participants, however, were kept ignorant of this fact. One can read, therefore,



the whole test as an interface, a demo, of what a real computationally aided interaction would look like. What gives this demo force is that it is the performance of a future ideal. By extension, even if the technology did not yet exist, the implication was that it *should* exist and must be built. A project that would come to preoccupy not only Negroponete but also entire fields of computer science and corporate research until today.

In articulating this vision of the future, Negroponete said something vital, regularly repeated at the time by many human scientists and engineers, and evocative of the forms of changes in attitudes to race, population, and intelligence that this new epistemology of the demo induced:

The three user-inhabitants said things to this machine they would probably not have said to another human, particularly a white planner or politician: to them the machine was not black, was not white, and surely had no prejudices. . . Machines would monitor the propensity for change of the body politic. . . What will remove these machines from a "Brave New World" is that they will be able to (and must) search for the exception (in desire or need) the one in a million. In other words, when the generalization matches the local desire, our omnipresent machines will not be excited. It is when the particular varies from the group preferences that our machine will react, not to thwart it but to service it. (Negroponete 1970, 57)

This is a new form of urban planning imagined as having no pre-ordained organization and constantly growing by seeking to consume differences or varieties into the system. This is a model that assumes that many different agents making minute decisions can, collectively, produce an intelligent or "smart" environment. This smartness can emerge without consciousness. Implicitly, therefore, Negroponete was also introducing a new idea of population as a cloud or source for difference, a "propensity for change," in his language. This automation of emergence is key to understanding the place that responsive environments have within a broader political economy of globalization in our present. What systems like financial algorithms and smart cities do is capitalize on change, on the unknowability, to use the financial adage: "the known unknowns" as the site for speculation or growth.

While seemingly distant from any discussion of trauma, in the simulations of the Architecture Machine Group the race warfare of the United States was transformed into evidentiary examples for the necessity of computing. Situated within a moment of extreme urban crisis and violence, the Architecture Machine Group attempted to turn the external traumas of American racism and economic crisis into an interactive simulation and to advance computing as the solution to these structural problems. If social structures could not help—it was thought—the demo could.

## Demo or Die: In the Cybernetic Box

While beginning with humans, Negroponte and his Architecture Machine Group quickly turned away from conversations, interviews, and Turing tests to move towards immersive environments and a new frontier: art. They designed a micro-world called SEEK (fig. 4) for the famous *Software* exhibition held at New York's Jewish Museum in 1970. The installation consisted of a small group of Mongolian desert gerbils (chosen according to Negroponte for their curiosity and inquisitive nature), which were then placed in an environment of clear plastic blocks that was constantly rearranged by a robotic arm. The basic concept was that the mechanism would observe the interaction of the gerbils with their habitat (the blocks), and would gradually "learn" their living preferences by observing their behavior. This "cybernetic machine" understood the world as an experiment, but also meant the introduction of cognitive and neuro-scientific models of intelligence into the environment. Apparently, traumatizing gerbils was a route to better computer-aided design.



[Figure 4] *Software*: cover of the exhibition catalogue, 1970. Courtesy of the Jewish Meseum New York.

For Negroponte, ideas of machine and human intelligence were about conversation. A true machine intelligence must *not* replicate human intelligence, he argued. For Negroponte a true "architecture machine" would not be a modern machine serving human needs, but an integrated system that was based on a new type of environmental intelligence that is capable of sensing and responding to sensory inputs. His articles and books came down to a constellation of theories about intelligence and complexity to argue that design had to become process, a "conversation" between two intelligent species—human

and machine—and not a linear cause-effect interaction.<sup>3</sup> “We are talking about a symbiosis that is a cohabitation of two intelligent species,” wrote Negroponte (1970: 7).

This “conversation,” therefore, can no longer be thought of in terms of human language, bodies, or representation. Instead it is “behavioral” and “cybernetic.” What had begun as efforts to enhance design practice, and then became about introducing humans into circuits of machines, now abandoned the human entirely. Whether gerbils or people, the principle remained the same: “Demo or Die”! The world rendered as a demonstration or a prototype, one where death itself (in this case of the gerbils) is not a failure, or even a trauma, but the very rationale for increasing the penetration of computing into life.

This experiment in rethinking what was intelligence, or perhaps even life, unfortunately, went quite badly, or perhaps creatively, depending on the point of view. During the exhibition the museum almost went bankrupt, the machine constantly ceased working (the problem being in both software and hardware), the gerbils confused the computer and ended up becoming aggressive, attacking each other, and getting sick. Here we encounter the question of what it means to produce trauma from within a cybernetic system. No one thought to ask, or could ask, whether gerbils wish to live in a block built micro-world (Shanken 1998). No one could ask, because conversations were now interactions and behaviors, without translation. When Negroponte’s computerized environment broke down at the Jewish Museum, the art critic Thomas Hess wittily stated his position in an *Art News* editorial. He described the gerbils as covered in excrement and shadowed by the broken arms of the robot. “Artists who become seriously engaged in technological processes might remember what happened to four charming gerbils,” he concluded (Hess 1970). No matter, “Demo or Die”! Now quite literally.

## Demo or Die: In the Media Room

Within a few years, Negroponte publishes his book *Soft Architecture Machines* (1976). In this new “soft” world, the actual computer disappears from sight and the environment itself connects to the user, who is immersed within. Both populations and environments are transformed into material mediums. What had started as a “conversation” and then became an experiment had now become environment. What had begun as a question of intelligence was now one of interaction: sensation, perception, and cognition becoming the dominant design concerns.

3 Negroponte and his colleagues dreamed of an ecology of constant feedback loops of machine human interactions, one that evolved and changed, grew “intelligent” (1970: 7).

Negroponte's new approach was centered around a new structure: the Media Room. This room had quadrophonic sound, seamless floor-to-ceiling displays, and a hardware running the room that cost of few million dollars (Mostafavi 2014). The Media Room housed the aforementioned Aspen Movie Map (one of the lab's pioneering projects) and it was one of the first three-dimensional digitally mediated responsive environments ever built. There were no computers to be seen, as this was not envisioned as a model: it was supposed to *be* Aspen itself. As Michael Naimark, an artist who worked on the project, has written:

Aspen, the picturesque mountain town in Colorado, is known for two processes, or "verbs," relating to heritage and virtuality. One is to "movie-map," the process of rigorously filming path and turn sequences to simulate interactive travel and to use as a spatial interface for a multimedia database. The other is to "Aspenize," the process by which a fragile cultural ecosystem is disrupted by tourism and growth. (Naimark 2006)

One can extrapolate from this quote that the movie map is not a representation: it is an operation, a way to live, a way to be in the world. It is also a self-trauma inducing event; it "Aspenizes" or disrupts ecologies. Whether disruptive or emergent, the architects, designers, and engineers of this project imagined it not as a room, or simply an interface, but as a "cultural system" and an entire ecology.

As one watches the film of the original demo, the questions of race, urbanization, war, and society fade into the calm embrace of interaction. Watching the video of the project taken by the lab, one sees an individual slowly navigating the space of Aspen. The field is analogous to a single shooter game, but at the same time in the sky hangs an abstract map that offers the observer a global view of the scene. One is in the local and in the global at once. This is a user who is no longer a subject, but perhaps, to cite Deleuze a "dividual"—compartmentalized into pieces of information and attention, and part of a population now rendered as variations and "propensity for change." In a move that anticipates contemporary trauma treatment, historical and contextual features of the image are used not to produce affiliation, nostalgia, or memory, but to reorganize the perceptual field and attenuate it into the nervous system. More critically, the individual here is both given a sense of control over the space while simultaneously being consumed into the network. The structural politics of both militarism and race war are rechanneled into interactivity.

This returns me to the question of art, and the small sad gerbils, in their excessively responsive environment. The essential question that remains is: How to encounter this demo, or test bed, that has now become our world? How to encounter difference, complexity, chance, and perhaps even pain and trauma? In an age where chance itself, the changes in the system, is the very site of automation, we must produce a politics, and criticality, of chance and

complexity. By cannibalizing older structures of vision and gaze, the Aspen Movie Map obliterated the possibility of evidence and witnessing altogether. This could be the genealogical underpinning to what the anthropologist Rosalind Morris has argued is the “narcissistic economy” of contemporary warfare and torture (2007).

Post-traumatic stress disorder therapies repeat this understanding. In prolonged exposure therapies with virtual reality, the function of the immersive environment is posited as reconciling the automatic and conditioned responses, thought to emerge from the more “primitive” portions of the brain with the higher conscious moral and ethical functions. The therapy is an inversion of psychoanalytic principles: Rather than pass through the conduit of an encounter with the other in order to co-produce a reliving of the event and with it a re-narrativization, there is no life. Only pure communication without differentiation.

## Conclusion

At the end of this essay, I want to return to Farocki’s *Serious Games* and the moment in which the soldier remembers the event of the killing of his comrade. The soldier narrates this event for about one and a half minutes, while we watch on a second screen the simulation, as seen through his eyes. He recalls driving down a road on a beautiful evening in the desert. While wearing the virtual reality headgear, he says to his therapist: “It was very quiet, and that had me worried.” On the other monitor we see the simulation: a road winding through sunset desert in beautiful orange and pink hues. He continues to narrate. Suddenly there is the sound of shooting, but he can see nothing. He only hears the noise of shooting. He stops. Then he says a missile is fired. A moment later we see through “his” eyes the explosion in front of the jeep. He exclaims and then we see him look down. He calmly announces that he then realizes that his “buddy” was hit.

Within this moment Farocki returns to something that I have not fully discussed but is implicit in all analyses of preemption—mainly historicity. If there is one thing in the “Demos or Die” desire, it is the evacuation of historical temporalities: Each demo is a thing in itself, a world only referential to its related demos. Instead in his *Serious Games* series, Farocki recuperates the histories of race, violence, war, difference, and sex that are the never recognized substrate of our media systems.

The installation *Serious Games* does this by creating a strange effect where we hear the memory of the soldier in slight advance of our seeing through his eyes. We are both allowed into the mind and eye of this subject, while simultaneously being encouraged to view him as different or other than the spectator. We are interpolated into empathy, without identification. The installation

continually asserts our encounter with psychic pain, a drama we can suddenly almost “see,” because the other forms of information have been made so repetitive. It is in this moment, in which we share memory out of sync with media flow, that we realize: we, too, are being conditioned by this apparatus.

Farocki (2004: 193) once argued that “reality has not yet begun”: it has not begun because we cannot witness or experience the death or suffering of others—whether animals or human—with love. In saying so, he awakens us to the fact that the demos of our digital and electronic media are not simulations, because there is no world to which they refer or replicate. What our demos do is remove our ability to care, and insert our ability to consume and analyze data.

It is to this condition that critical digital humanities and all forms of criticality and art making must reply. This comes from attempting to excavate the latencies and ruptures within media systems, by attaching the relentless belief in real-time as the future, to recall that systems always entail an encounter with a radical “foreignness” or “alienness”—an incommensurability between performance, futurity, and desire that becomes the radical potential for so many of our contemporary social movements, arts, and politics. It is our challenge in critical work to unmoor the practice of the demo and reattach it to different forms of time and experience that are not reactionary but imaginary. What Farocki’s installation does is to make everybody realize the limits of human vision and recognize the image’s role in recruiting our affective energies for war, or capital. The goal of critical scholarship and artistic and scientific practices is to make media unstable. To turn not to solving problems, but to imagining new worlds exceeding the demands of war and consumption that kill signification, experience, and time itself.

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