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They Are Oblivious to the Violence of Their Acts. Windows, Screens and Pictorial Gestures in Troubled Times

Carolyn Christov-Bakargiev

Over the last fifty to sixty years, the world has experienced a scientific and technological revolution not seen since the sixteenth century, when we invented printing and also found out that the world is neither flat nor at the center of the universe but rather a rotating ball spinning around the sun. After some military research in the pre-World War II period, when computers were still nothing but calculators grounded on the fact that every piece of information can be represented as a sequence of binary bits, the digital revolution started with the development of large computers, sometimes the size of an entire floor of a building, mainly used by governments and the military in the 1950s and 1960s. These were machines employing programs called databases to manipulate data more quickly and efficiently, data being stored magnetically on disks or tapes rather than on paper books.

The microprocessor in the 1980s and miniaturization ushered in the personal computer, used in private homes and small businesses as a word processor, and as a device to create spreadsheets as well as playing games. By the mid-1990s, computers could be connected via telephone and the first commercial networks were born. Through email, content could be easily shared, quickly substituting the postal system, so that computers became mainly technology for information transfer. And since any computer could then make data available to others, the network of these hubs of data became the World Wide Web. The future "IoT," internet of things, a world of "smart objects" began, and security protocols were developed. The evolution of the laptop in the 1990s made the computer mobile, which in turn, when integrated into the mobile phone around 2005, became the smartphone, a portable permanently online computer, quickly shifting it from a primarily aural device to a primarily visual device with a screen. Because it was a receiver, the new smartphone was also a sensor, transmitting the user's location, and this is perhaps the moment when things began to change more radically: it made people traceable, constantly transmitting the data of their whereabouts.

After the phone, other devices incorporated computers, such as televisions, music players, cars, so that we now have multiple computers, rather than one with integrated functions. Because every phone is a producer of data (recordings, photographs, etc.), each user became a producer and this data began to be exchanged, ushering in social media in the 2000s and quickly reversing the camera's gaze from recording outwards to recording inwards. The era of the selfie emerged, with an exponential increase in the data produced: "Data starts to drive the operation; it is not the programmers anymore but the data itself that defines what to do next."¹ The commercial implications were vast. Companies started to search for patterns of customer behavior in order to

¹ E. Alpaydin, *Machine Learning: The New AI* (Cambridge, MA and London: The MIT Press, 2016), p. 11.

predict their demand. This datamining was amongst the first examples of AI. “We do not know the rules [of customer behavior], so we cannot write the program, but the machine—that is, the computer—‘learns’ by extracting such rules from (customer transaction) data.”² Once the data recorded became so enormous (the “dataquake”) that it became too difficult for humans to write adequate programs to analyze it, our times of “smart devices” evolved—where software, ubiquitous to people’s daily lives in the form of apps, can adapt its behavior automatically to different situations. From a “computer programmer” writing algorithms (a program that analyzes received input data and provides an output or result to the task it has been allocated) to solve problems to a data-collecting world, we have evolved into a society of applied statistics through which an algorithm can change its program as it goes along in order to make smart devices help us.

Fundamental questions about whether we want or need this help are no longer asked, and queries around the meaning of life itself are rarely raised in the AI discussions because they do not pertain to instrumental logic. Self-driving cars, with their vision sensors and radar, will probably make better drivers overall, but what will happen to the pleasures of cruising along winding roads, to the thoughts, imaginings and conversations that occurred while in a state of attention to the road and thus less focused on a rational thought process in our minds? Will we have more, better or different thoughts? Will it be like making self-driving skis to carry us down mountain slopes with no broken legs while we use no skill to direct them? Will new smart-glass windshields turn into opaque screens for ads and films?

When AI translators become so sophisticated as to render obsolete the jobs of translators, what will happen to the personal interpretation of texts that makes the difference between a good translation and a great translation? When the mind of a great contemporary poet meets that of another poet and makes a translation of it, the translator bends the original text to his or her worldview, allowing thousands of readers to receive a new text and not just a translation.

In the numbness, in the dumbness of the algorithms, even intellectuals might become deaf and blind, unable to remember the outrage that once motivated their output and practice—cultural work based on critical thinking.

Artificial Intelligence was called “machine learning” in the 2000s, and by the 1950–60s, when it was exotically named “cybernetics,” combining Greek and Latin words (*kybernein*, to pilot a ship, and *nauta*, navigator—thus to pilot on one’s own, automatically) it was based on the notion of the “feedback loop,” which would allow for better and better computer programs based on their ability to adapt to results, as real brains do.

While AI used in the security industries might today practice “learning” by recording humans breaking panes of glass and then processing the recorded information or data, we could romantically strike and break the glass of our windows, or of our smart phones, in luddite mode, attacking the material base of the liquid-crystal screens of which our devices are made. But perhaps that action might just help the on-going process of de-humanization through which our civilization is going. It might be a better tactic to search for and make visible, or audible, the material substance and structure that underpins much of what appears as a seamless abstracted world, a black-boxed world where all we need to do is swipe the things we own to make them magically and harmlessly

² Ibid., p. 14.

awaken and work for us, oblivious of the alienated labors behind the making of each and every one of those smart devices, oblivious of the losses of embodied life with which they are intimately entangled. In our era of extreme contrasts and global violence, the poet speaks, the artist makes work, the philosopher deconstructs instrumental thinking, the neuroscientist tells us not how easy it might be to reproduce the brain, but rather how little we actually know of the brain and how what the brain does in its neural circuitry is intimately embodied and entangled in the complexity of our living organisms.

And so to site our work on the stuff of screens—on the glass cover of our smartphone, on the glass inside our virtual-reality 360-degree vision headsets, or on the glass of windows that traditionally delimit inside from outside, allowing light to enter and us to see outside—means to site the work in the locus of (im)materiality itself today, at the cusp where the virtual resists being contained and pushes into the space in front of the screen, shoving us into the corners, removing our hands and ability to touch anything in a new apparent state of passivity as we move our heads up and down and around wearing those glasses in what Hito Steyerl has called “Bubble vision”:³ “The viewer is absolutely central, but at the same time, he or she is missing from the scene [...] Is this ‘bubble vision’—this 360-degree vision—a training scheme to adapt humans to a world from which they are increasingly missing because they have been replaced by invisible systems or automation or robot? [...] Are people rehearsing how to be their own ghosts?”⁴

Amongst the sharpest writers and theoreticians, Steyerl has since the late 2000s⁵ produced pamphlet-style essays stemming from her teaching and her numerous public lectures that are available on the internet, often appearing as essays in the online journal *e-flux*.⁶ They are influential and inspirational for many artists worldwide, producing a skeptical counter-narrative to the enthusiastic progress-oriented corporate communication of the digital age. Since the mid-2010s, she has in particular addressed the power structures in the art world itself, revealing a systematic financialization of art with the rise of duty-free storage and the privatization of museums, the increase in artwork prices and the precarious job system of underpaid art workers that goes hand in hand with the digitalization of finance and a rising global war economy. It also goes in parallel with the development of the illusion of realism in a form of 360-degree vision that isolates the viewer through VR glasses. Like in the world at large, she sees an increasing division: between the wealthy collectors and investors on the one hand, and the voluntary internship and underpaid work of the substructure of the art world. She draws attention to this in numerous texts about the interaction between money, power and art, such as *Is a Museum a Battlefield?* (2013), *Duty Free Art* (2015)

³ *Bubble Vision*, lecture delivered on October 7, 2017 at the Serpentine Marathon titled *Guest, Ghost, Host: Machine!* Also further delivered in a more complete version at University of Michigan, Ann Arbor, on January 25, 2018 (co-sponsored by Taubman College of Architecture and Urban Planning and the Penny W. Stamps School of Art & Design), and at Yale University on February 21, 2018. First published in *Frankfurter Allgemeine Sonntagszeitung* on November 18, 2018. See <https://www.youtube.com/watch?v=boMbdtu2rLE> and <https://www.youtube.com/watch?v=XF3ZeKRLR9U> (accessed December 15, 2018).

⁴ See <https://news.yale.edu/2018/02/27/dont-be-fooled-bubble-vision-says-visiting-artist-hito-steyerl> (accessed December 15, 2018).

⁵ In 2009, Steyerl first published her noted “In Defense of the Poor Image” in *e-flux journal*.

⁶ Edited by Julietta Aranda, Brian Kuan Wood, and Anton Vidokle, *e-flux journal* started in 2008 as part of the larger publishing platform, archive, artist’s project, and curatorial platform and enterprise founded by Anton Vidokle in 1998.

and *A Tank on a Pedestal* (2016).⁷ Many of her texts have appeared in print as well, in her collected essays since 2012.⁸

Like a chameleon, Steyerl thinks tactically, one situation at a time, close-up, reacting to shifting contexts of acceleration that characterize our world. Her art is ultimately thought in practice, thought in action, with installations and lecture-essays producing a counternarrative, and revealing hidden truths behind the clean, tight-knit stories on the surface. Always aware of the urgent knots entangling technology, consciousness, social injustice, and violence, Steyerl uses her critical and deconstructive tools to address the emergency at hand.

Giuliana Bruno reminds us that an artwork reveals itself through its materiality and that we engage with it on its surfaces:

«“What is the place of materiality in our contemporary virtual world?” To engage materiality, I suggest that we think about surfaces rather than images, and explore the fabrics of the visual and the surface tension of media. In order to pursue a materialism, I propose performing critical acts of investigation on the surface, especially focusing on screen surface, and mobilizing the wide potential of material expression across “screens” of different media [...] An architecture of mediatic transformations comes to the surface at this very junction. Surface tension can turn both facade and framed picture into something resembling a screen. This filmic screen, far from representing any perspectival ideal, is no longer a window but is reconfigured as a different surface.

Made of translucent fabric, this screen is closer to a canvas, a sheet, or a curtain. Partition, shelter, and veil, it can be a permeable architectural envelope. On this material level, the current intersection of canvas, wall, and screen is a site in which distinctions between inside and outside temporally dissolve into the depth of surface. The screen itself is becoming a fold, in which all appears to fold back into screen surface—that reflective, fibrous canvas texturally dressed by luminous projections [...]. This passage is crucial because it affects the sedimentation of the visual imaginary, its residues and transformations. It concerns not simply the medium but also the space of image circulation, forms of siting, and the

⁷ In *Hito Steyerl. Left To Our Own Devices*, Alexander Koch points out how her critiques are always based on an awareness of her entanglements with her objects of critique: “In *Is a Museum a Battlefield?* (2013), she shows that the museum has long been one of the social settings in which the struggles for political and economic dominance are played out. But she also recognizes herself amidst these struggles, understanding her own close relationship to the military-cultural complex. When she investigates the origin of a machine-gun bullet that killed her friend Andrea Wolf, a PKK (Kurdish Workers’ Party) fighter, in 1998, she finds out that its producer, Lockheed Martin, is both a sponsor of the Istanbul Biennial, where she gives her lecture, and the patron of her exhibition at the Art Institute of Chicago, where her film on Wolf’s death is one of the works shown. Truly occupying a problem allows credible action. And only by being a part of the world can art observe it and understand it. *Duty Free Art* (2014) strikes deep into art’s social function. Free-trade zones, where speculative art commodities are bought and sold invisibly and tax free, are, like civil wars, an important backbone of the international art business. Both facilitate the redistribution of public property into private hands and are catalysts of global inequality. Furthermore, Steyerl uses WikiLeaks documents to show how the Louvre, British Museum, and star architect Rem Koolhaas served the Syrian Assad regime as museum planners and gentrifiers. She describes all of this as the top-down organized production and communication conditions of contemporary art hidden behind the art itself. Steyerl proposes a reversal of perspective to unveil one’s own reality bottom-up” (transl. M. Turnbull, <https://anti-utopias.com/newswire/hito-steyerl-left-toour-own-devices/> (accessed December 16, 2018).

⁸ *The Wretched of the Screen* (e-flux journal series), ed. by J. Aranda, B. K. Wood, and A. Vidokle (Berlin: Sternberg Press, 2012); *Duty Free Art. Art in the Age of Planetary Civil War* (London and New York: Verso, 2017).

situational experience.»⁹

In the age of liquid crystals, we need to ask and reveal what AI actually is, to discuss how data is collected, managed, interpreted and used for its development, and explore the ontology of what subjectivity means and what agency humans will have once they potentially become a new work force for the machine, producers of data.

In her book *Liquid Crystals. The Science and Art of a Fluid Form*,¹⁰ Esther Leslie explores precisely this entanglement between liquidity and crystallization in modernity and through our ecological crises of melting ices. In our data age, she suggests:

«Techno-science is now unthinkable without the intelligence of the liquid crystal. It makes possible the very application of intelligence in its data-crunching algorithmic somersaults, in the form of government and commercial intelligences. Liquid crystal enables the virtual border guard, iBorderCTRL, who determines if the stranger is telling lies or truth, which are the conditions of the stranger's entry into states. [There is] a deep history of intelligence wrapped up in the liquid and the crystal and [we] ask how the extending vocabularies of qualified intelligence—military, emotional, artificial—are augmented in the age of the device, and with the emergence of device intelligence, whose capacities include precognition, and in whose future lies the promise of radical atomic intelligence.»¹¹

Following her earlier documentary work, Steyerl has for a number of years been creating installations in which film production is associated with the construction of architectural environments. She continues to focus on the role of media, technology and the circulation of images in the era of digital nativism, but now also offers perspectives on how the digital contemporary imagination shapes our perception of reality, and how embodied experience can push back against its grain.

In the late 2000s, at the moment of the emergent business of High Definition, with companies ever more focused on precision, fidelity of representation, and closeness of detail, Steyerl celebrated the poor image instead, with her essay “In Defense of the Poor Image” (2007–9).¹² This essay significantly contributed to the redemption of the ductility, plasticity and revolutionary potential of circulating images, which would transform into empowerment in many ways, including through the culture of memes. Today, however, as the flow of images has been superseded by the flows of personal data, the poor image may seem obsolete, and with little critical potential. It is at this point that the space of embodied spectatorship becomes crucial to Steyerl's work with immersive installations.

When financial capitalism strengthened through the merging of spectacle and speculation, “theory

⁹ This text on materiality was published in Italian in *Alfabeta2*, no. 21, July–August 2012 and presented the path of research of her book, *Surface: Matters of Aesthetics, Materiality, and Media* (Chicago: University of Chicago Press, 2016).

¹⁰ Published in 2016 by Reaktion Books in London.

¹¹ Abstract of Esther Leslie's lecture at Castello di Rivoli on December 12, 2018.

¹² Published in November 2009 in *e-flux journal*, no. 10. Republished in this catalogue, pp. 28-35.

and entertainment, social diagnostics and the dream factory,”¹³ Steyerl came up with *Liquidity Inc.* (2014), a single channel 30-minute HD video exhibited in a specially designed architectural environment reminiscent of a martial arts practice gym or studio, which was first shown at the Montreal Biennial in 2014¹⁴ and subsequently at Artists Space in 2015, at ICA Boston in 2018, and at MoMA in New York. Focusing on the digital age as an age of “liquid modernity,”¹⁵ “*Liquidity Inc.* takes as a point of departure the story of Jacob Wood, a former financial analyst who lost his job during the 2008 economic recession and decided to turn his hobby in mixed martial arts into a career. Steyerl follows actor and martial artist Bruce Lee’s dictum to ‘be shapeless, formless, like water,’ turning ‘liquidity’ into a trope fluid enough to speak about everything—from the weather to water as material resource, to the circulation of information and assets. Projected onto a double-sided screen in front of a wave-like ramp structure, *Liquidity Inc.* is a captivating parable of economic crisis and contemporary culture that is by turns playful and poignant.”¹⁶

A year later, in *Factory of the Sun* (2015), first presented in the German Pavilion at the Venice Biennale, Steyerl explored how gaming has by now penetrated our everyday lives and structures the way we move our bodies in the so-called “real” world. With *Hell Yeah We Fuck Die*, first shown at the Sao Paulo Biennial in 2016,¹⁷ Steyerl then looked at the robotization of society by revealing the actual work done in industries that develop and test anthropomorphic AI robots.

Finally, presented in the spaces of the Manica Lunga, *The City of Broken Windows* (2018) explores the ways in which AI affects our urban environment and how alternative practices may emerge through pictorial acts in the public space. It stems from research into the practices of AI industries and surveillance technologies, as well as those of urban painting—apparently unrelated areas. This overall title comprises two videos as well as other elements. *Broken Windows* (2018) and *Unbroken Windows* (2018) are each installed at either end of the Manica Lunga. The two videos, whose soundtracks fill the entire space, envelop the viewer. The artwork as an installation in the museum is based on the pre-existence of the Manica Lunga, a long narrow gallery, a “found” architectural space offered to Steyerl as an a-priori for her exhibition, a structure serendipitously able to suggest, through its linearity, the image of an obsolete architecture and the form of ordered thought. It is also able to create an apparently binary structure, with two windows, one at either end, opposing each other: one has been boarded up and painted, while at the far end, a large window is cracked. Steyerl has placed at either end, two large flat screens on easels, also opposing each other. The Manica Lunga building was originally constructed in the in the seventeenth century as one of the world’s first picture galleries, thus specifically for the contemplation of art. As those ancient visitors walked down the corridor from east to west along its northern or southern walls, they observed paintings (pictures *of* the world) alternating with large windows (pictures *from* the world), thus providing a comparison of the real and its representation through art.

¹³ Koch, *Hito Steyerl. Left To Our Own Devices*, cit.

¹⁴ Directed by Sylvie Fortin, the exhibition took place from October 22, 2014 to January 4, 2015 at the Musée d’Art Contemporain de Montréal.

¹⁵ Zygmunt Bauman, *Liquid Modernity* (Cambridge: Polity Press, 2000).

¹⁶ The work was exhibited in *Art in the Age of the Internet, 1989 to Today*, organized by Eva Respini, Barbara Lee (Chief Curator), with Jeffrey De Blois (Assistant Curator), ICA Boston, February 7 – May 28, 2018. See <https://www.icaboston.org/exhibitions/hito-steyerl-liquidity-inc>. (accessed December 16, 2018).

¹⁷ Also later exhibited at Skulptur Projekte, Münster and Kunstmuseum Basel in 2017.

The materiality of Steyerl's project traverses the actual painting of the wood-boarded window at the entrance of the Manica Lunga, the cracked crystals of the windows themselves, both found and created ad hoc, the vinyl cut lettering running along the walls and windows, the large wooden easels that hold up the video flat screens and the flat screens themselves, as well as the sounds from the two videos and their reverb in the space.

The surface of a video or film is also built up through its montage and its editorial folds. *Broken Windows* documents the work of engineers employed in the alarm systems industry, and thus alludes to social disruption generally. It revolves around a number of interviews and the process of teaching AI how to recognize the sound of breaking windows in order to produce security systems able to detect intruders. It documents the work of an AI lab in Cambridge, UK, established during World War II, where engineers are currently breaking window panes over and over again to create the data on which a machine-learning algorithm can base its ability to recognize the sound of glass breaking, the noise of matter reacting to force, for the purpose of preparing software to serve the security industry and prevent intrusion into buildings.

The images of young engineers laboring away with hammers and striking the glass over and over again and then sweeping up the mess of shards on the floor, as if they were janitors, suggests how humans are working for technology now, rather than the other way around. This recalls the "captchas" generated by Google to prove we are human, making us assistants to the machine. Having established that you are human, Google then scans your browsing history and offers this data, like that of innumerable others, to companies that extract patterns from large sets of information. If you look and act like other humans, then you are human. While the Turing test operated by confusing the subject, these tests are about network analysis that checks if you are behaving like other humans. So this drives us to conformist and homogeneous behavior patterns.

Artist Jules Laplace worked with Steyerl by running the digitally recorded sounds through an algorithm developed for voice identification to achieve what sounds like an atonal and discordant piece of music that represents how the digital neural network understands the sound of the breaking glass. Countless windows were smashed to create this discordant symphony. The audio reproduces a melody composed of janglings and tinklings, but the sounds, scattered throughout the space, are unclassifiable. This particular sound, layered into the work, recalls of the chiming of bells rather than the sound of the broken windows. This disjunction between the image of the breaking of the window and the bell-like sound constructs an in-between space. It speaks to the failure of the machine.

Unbroken Windows, at the opposite end of the space, is also screened on an easel, as if the entire work were an elegy to video screens as a quasi-obsolete technology. It documents the activity of the "activist" war veteran Chris Toepfer (New York City, 1962) and the non-for-profit collective he created, The Neighborhood Foundation, committed to eliminating urban and architectural degradation in the most disadvantaged suburbs of Chicago and other parts of the United States. The collective hand-paint boarded-up windows in abandoned homes, either with decorative images such as flowers and plants, or with trompe-l'oeil windows that might be mistaken for real windows, thus providing the illusion that there is no urban decay in the neighborhood. On Steyerl's request, Toepfer also painted the outside of the large boarded-up third floor window facing the courtyard of Castello di Rivoli with trompe-l'oeil windows, thus altering the most frequently posted online

image of the Museum on the web.¹⁸

There are thus two parallel narratives and two completely different belief systems present in the exhibition. The first is the narrative of scientific research able to bring progress to humanity and based on an idealized hope and faith in technology and machine-learning, at the forefront of computer science today. The other is a narrative about embodied action's ability to counter social decline through activism and grassroots community social projects. The tools in both videos are old technologies (the hard hammer of the engineers versus the soft brush of the painters); the surfaces in both videos are connectors and separators (the cracked transparent glass window at the back of the Manica Lunga versus the opaque boarded-up and painted window at the front, reminiscent of a Malevich as well as of an abstract form still downloading into an image). Together, these two videos produce a double, interlaced documentary about the distance, contrasts, and utter non-relation between the competing narratives of our digital times, those of progress through science and those of progress through grassroots hands-on activities, increasing wealth and increasing poverty in the world at once. The two discourses are wrenched apart while also shown to be co-present and contemporaneous. Steyerl's work is accompanied by a line of text along the walls and windows on each side of the Manica Lunga. As you walk through the physical space of the corridor, you witness the intersection of the two discourses, expanding and pushing into real space from inside the screen. The space of reading and listening, of aurality, rubs up against the space of an impoverished visuality.

This is the first installation by Steyerl that prominently incorporates written text.¹⁹ Statements taken from the interviews with digital engineering researchers turn into disjointed and ungrammatical comments resulting from the incorrect processing of information by AI. "The City of Broken Windows" text is on your left as you walk down the space, while "The City of Unbroken Windows" text runs along the wall as you return towards the entrance from the back. The two form a narrative deriving from various sources; quotes from "The Broken Window Fallacy" featured in the essay on economic theory entitled *That Which Is Seen and That Which Is Not Seen* (1850) by Frédéric Bastiat (Bayonne, 1801 – Rome, 1850)—in which the author recommends that we pay attention to economic effects that are not immediately visible—turn ultimately into words about magic rituals in a utopian unbroken city.

The act of reading pushes you forward, away from the screen, since you need to physically walk in order to read. The artwork thus encourages the viewer/listener/reader to become active as the text becomes embodied and is transformed into the main visual element of the installation. As we increasingly enter a world of smart windows that transform into opaque projection screens in lieu of sources of natural light, Steyerl's elegy to the transparency of glass allows views onto the mountain landscape outside.²⁰

The notion of critical thinking originated in philosophy and in the attempt to analyze what one

¹⁸ This part of the project refers back to the "window tax" that in the past was levied according to how many windows a person owned, which was supposed to indicate their wealth, so that many wealthy avoided the tax by walling windows and painting trompe-l'oeil ones in their place.

¹⁹ The two texts are published in this catalogue on pp. 16-19. On Steyerl's writings, see Gridelda Pollock in this catalogue, pp. 46-53.

²⁰ People walking in the world and refugees pressing onto the borders of Europe or of the United States come to mind, so far from the privilege of walking as an artistic experience in the gallery.

receives as information or perception, with the aim of not taking it at face value, on the surface, but instead forming a judgment and, based on that judgment, acting with consciousness. In the twentieth century, a little less than one hundred years ago, the School of Frankfurt combined philosophical analysis, Marxism and sociology to develop an acute critical thinking. Amongst these philosophers, Walter Benjamin is often mentioned by Steyerl in her writings, connecting thinking today with thinking then as she shares his critique of progress with her own today. Together with these tools, she grafts feminism and media theory to create one of the most thrilling tight-rope balancing acts of our times—the work of an artist, filmmaker, and writer deeply committed to acting in our troubled world without compromise, with the goal of countering its violence, its tears, its wounds. She is a media artist committed to people, to the safeguarding of their bodies, their lives, their relations.

In “On the Concept of History, thesis IX,”²¹ written in 1940, Benjamin wrote the famous paragraph about Paul Klee’s painting:

«There is a painting by Klee called *Angelus Novus*. An angel is depicted there who looks as though he were about to distance himself from something which he is staring at. His eyes are opened wide, his mouth stands open and his wings are outstretched. The Angel of History must look just so. His face is turned towards the past. Where we see the appearance of a chain of events, he sees one single catastrophe, which unceasingly piles rubble on top of rubble and hurls it before his feet.

He would like to pause for a moment so fair, to awaken the dead and to piece together what has been smashed. But a storm is blowing from Paradise, it has caught itself up in his wings and is so strong that the Angel can no longer close them. The storm drives him irresistibly into the future, to which his back is turned, while the rubble-heap before him grows sky-high. That which we call progress, is this storm.»

And in the following thesis XVII, Benjamin adds, “Thinking involves not only the movement of thoughts but also their zero-hour [Stillstellung]. Where thinking suddenly halts in a constellation overflowing with tensions, there it yields a shock to the same, through which it crystallizes as a monad. The historical materialist approaches a historical object solely and alone, where he encounters it as a monad.”²²

The ability to see the meaningfulness in shattered glass, as Marcel Duchamp did when his *Large Glass* broke by chance, is intimately connected with the ability to perceive the glass’s materiality as crystal precisely via its cracks. In Donald Winnicott’s theories of the transitional object, the survival of the shattered toy, after its attempted destruction, allows for individuation to occur and selfhood to take shape in a Kleinian mode of art as a form of reparation rather than of sublimation of desire. And Theodor Adorno’s description of intelligence, *Minima Moralia* published in 1951, speaks to consciousness and the joining of sentiment and intelligence as the only defense from the stupidity of instrumental logic. In fragment 127, titled “Wishful Thinking,” he addressed the question of intelligence and how power thrives on the separation of intellect from sentiment. He states that the task of philosophy is to find the moral unity of intellect and sentiment, and that judgment justifies impulses, expressed psychically as sentiment, in their resistance to social pressure. Today, this

²¹ Originally published in *Gesammelten Schriften* I:2 (Frankfurt am Main: Suhrkamp Verlag, 1974).

²² <https://folk.uib.no/hlils/TBLR-B/Benjamin-History.pdf> (accessed December 17, 2018).

offers us a form of thinking able to contrast AI's detached knowledge as applied and interested statistics. Where there is interest, Adorno reminds us, "humans become stupid and use sentiment to resist understanding the absurdity of the contemporary world,"²³ and prejudice and routine reign along with moral insufficiency and lack of autonomy and responsibility; while thinking based on the non-separation of intelligence from sentiment "pushes us towards utopia."

Of course, Adorno's claim in favor of a form of critical distance and autonomy of thinking as a political and radical act has been, since then, much questioned, while feminism has thrived on the participation in the public sphere (Hannah Arendt), the embodied and engaged nature of speech, acts, and thought (Judith Butler), or on the need to be entangled with and embedded in the thick materiality of the business of living, celebrated by thinkers as varied as Donna Haraway and Karen Barad.

Steyerl's work *Adorno's Grey* (2012) is a documentary installation of video interviews, grey painted walls, enlarged photographic panels, and text. Here, she documents a group of conservators attempting to verify the hearsay story that Adorno had asked the university to paint his classroom walls gray in order to think better. Layers of the white-painted walls of the philosophy department in Frankfurt are chipped away to see if any gray paint remains below. *Adorno's Grey* is a critique of the philosopher's inability²⁴ to appreciate the students' movements in Germany in 1969, which, paradoxically, were triggered by his (and generally the School of Frankfurt's) critique of modern society. It is also a cry in favor of physical action rather than abstract philosophical discussions by an artist who studied philosophy but then went on to filmmaking, performative lectures, the dissemination of engaged pamphlet essays that are calls for alert consciousness and action, and finally to embodied and immersive art installations. But it is also a homage to a great philosopher whose message was fundamentally that capitalism is grounded in the ability of power to produce stupidity and lack of independent critical thinking: the dark side of the Enlightenment project based on a classificatory impulse.

This is particularly important today because, since the mid-to-late-1990s, the digital revolution has produced a new form of Enlightenment unable to see its own contradictions and based on a new divide between mind and body, defined today as real vs virtual: digitized, tagged and connected vs analog, disconnected, and based on a desire to classify and organize data. This has produced a world of people who need to process an overwhelming amount of information on a daily basis, as text and images flow and circulate at an ever-increasing pace. At first, the world was divided between those with computers, who took part in this new world, and those who were not online,

²³ Theodor Adorno, *Minima Moralia. Reflections on a Damaged Life* (1951) (London and New York: Verso, 2005) pp. 197–99.

²⁴ *Adorno's Grey*, first shown at Wilfried Lentz in Rotterdam from November 11 to December 15, 2012, is the occasion for an oblique critique of the patriarchal aspect of the German philosopher, who was also said to have been shocked by a number of female students who bore their breasts in front of him during a class, after which he is said to have collected his papers and left the classroom, never to return. Adam Kleinman reviewed the work in 2012: "After the credits, the projected image drops out while the projector lamp is left to burn for a short while. In this white, messianic light, it is now possible to see that each of the screen's collectively canted planes is painted in a different tone of grey respectively. Although the conservators never found the missing grey layer in Frankfurt, this final revelation of Steyerl's filmic apparatus presents the missing culprits, which tainted the depiction of the represented wall. With this cheap, yet effective trick, the artist seems to be trumping yet another fragmentation of the recorded actions. And still, this final 'proof' of an image contaminated lays bare not only the fact that cinema is itself composed of necessary illusions, but that these sensuous special effects can hold and distract our attentive gazes from actually seeing." See <http://www.art-agenda.com/reviews/hito-steyerl's-'adorno's-grey'/>(accessed December 17, 2018).

who had no access to digitally transmitted information. That gap has closed, so that refugees cross the Mediterranean with cell phones in plastic bags strapped to their arms to keep the devices dry and functioning. But while access has been provided, a new form of mental and physical slavery has emerged, because processing the information transmitted takes up most of the time of most people, leaving little or none left for critical thinking, for forming judgments, as a new blind faith in scientific progress, synonymous with applied technology and economic growth, has wiped out any positive association with philosophy.

We live in an outrageous world, on the brink of ecological catastrophe (and yet with most people numb to its effects, since they cannot see with their own eyes the glaciers melting or the plastic continent in the Pacific Ocean.) We are at the height of necropolitics, of wars and conflicts that some people, in Syria for example, have directly seen all too well, while others, in the protected and safe universes of their gated communities, do not see with their own eyes, nor do they smell the acrid odor of tear gas, or of gunpowder, nor touch the warm and turgid inertia of a dismembered limb. We are in the early stages of flipping the real and the imaginary inside out (abolishing or disrupting what psychoanalysis had called “the order of the symbolic”) through the digital revolution ushered in by computers and binary codes. We live in a world where bodies become lifeless or limp, zombies that wander through life attached to their small smartphone screens (soon to become, according to the digital sci-fi imagination around the linking up of biology and technology, direct implants into their eyes-turned-data-processing-cameras).

The myth of Cassandra not only tells the story of a woman who has the gift of prediction and is not listened to, but also speaks about humans’ fascination with technology (represented by the wooden horse) and the catastrophic effects it may have when it is let in to the City of Troy. While the Trojans sleep, unaware of the side effects of the technology, Acheian soldiers emerge. As we attempt to create artificial bodies to be our slaves, we find that we slave for them as well.

Among engineers, there is a strong desire for a new form of Enlightenment today based on new classificatory impulses, as well as a desire on the part of companies for the rituals of magic that obfuscate the workings of AI. In a lecture at Castello di Rivoli on December 12, 2008, referring back to mystical medieval scholastic philosophical debates around the size of angels, Steyerl suggested that the only question she would like answered by machine-learned devices being produced today was the following, useless one: “How many AIs can dance on the tip of a needle? If you can answer that, you can make a great device.” This is a quantum physics question, “the angel density problem”: how small is the smallest entity before collapsing into a black hole. She stated that, although “we know from art history that angels don’t have a shadow,”

«AIs have real existing shadows [...]. The shadow of AI is visible everywhere, yet the object is invisible. What is the shadow of AI? The [...] UK company that builds home security appliances, breaking windows for weeks on end to teach their neural networks the sound of breaking windows in order to embed it in their devices [...]. Let’s think about the work that will be created with this device. Deployed in areas with lots of burglaries (for example in the Bay area around San Francisco where there are new rich people because of the tech industry and new homeless people because of tech industry), this device would find a great market there.

Tech creates problems that have to be solved with more tech. If you continue like this, you arrive at a world where there is an even bigger market for this product but also bigger and

wealthier homes that are targets. But in this future world you may not be able to call any police anymore because you need to use private militia, but private militia might wish to own the real estate and even might believe it is more profitable to break the whole house as an industry. So if you keep exacerbating the problem, you end up with a world, like in Syria, a totally securitized world, assisted by AI, that looks like a war zone [...]. Let's think of this angel problem. You get a microcosm of a whole universe, with social hierarchies. So what is the shadow that tiny AIs might have? The shadows are forms of little demons that live in our smart phones.»

In 1946, just after World War II ended and at the start of the Information Age, Argentinian writer Jorge Luis Borges published under a pseudonym²⁵ the 146-word story “Del rigor en la ciencia” (“On Exactitude in Science”), inspired by an earlier text by Lewis Carroll about a map the same size as its territory of reference and fictionally attributed by him to a seventeenth-century author:

«In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it. The following Generations, who were not so fond of the Study of Cartography as their Forebears had been, saw that that vast map was Useless, and not without some Pitilessness was it, that they delivered it up to the Inclemencies of Sun and Winters. In the Deserts of the West, still today, there are Tattered Ruins of that Map, inhabited by Animals and Beggars; in all the Land there is no other Relic of the Disciplines of Geography.»

Umberto Eco, who came of age in the era of cybernetics, in 1982 celebrated this short text of Borges for its anticipation of the absurdity of the fetish of exactitude in science,²⁶ something useful today in our AI world of Big Data harnessing. Steyerl does not reference Borges in her work, but rather chooses to pay indirect homage to Italo Calvino's *Invisible Cities*,²⁷ published in Turin by Giulio Einaudi in 1972, at the height of Arte Povera. Because the Chinese emperor Kublai Khan does not know the language of all the different parts of his vast empire (“the emperor is he who is a foreigner to each of his subjects”), his envoys relate information to him that he cannot use. Also the explorer Marco Polo cannot speak the languages of the empire; that's why he chooses to communicate through gestures and is the only one able to be understood. The emperor listens to his fantastic descriptions of cities in the vast and boundless empire: “Only in Marco Polo's accounts was Kublai Khan able to discern, through the walls and towers destined to crumble, the tracery of a pattern so subtle it could escape the termites' gnawing.”²⁸ He “deciphered the signs but the

²⁵ Under the name B. Lynch Davis (a joint pseudonym of Adolfo Bioy Casares and himself), Borges published the short story as part of *Museo*. In this text, the short story is credited as being written by Suarez Miranda, a fictional invented seventeenth-century author.

²⁶ U. Eco, “On the Impossibility of Drawing a Map of the Empire on a Scale of 1 to 1” (1982), in *How to Travel With a Salmon and Other Essays*, transl. W. Weaver (Orlando: Houghton Mifflin Harcourt, 1994).

²⁷ I. Calvino, *Invisible Cities*, transl. W. Weaver (Orlando: Houghton Mifflin Harcourt, 1974).

²⁸ *Ibid.*, pp. 5–6.

connection between them and the places visited remained uncertain.”²⁹ One could compare the emperor to the vast world of all possible data that AI sets itself out to know through scanning and recording all that we search for and write and post and buy on the internet.

In her lecture at Castello di Rivoli, Steyerl paradoxically added at the end, “I used to be an open source maniac [...] but maybe it’s much better to not to say anything about any discovery in neural networks for the next 500 years [...] maybe we should only use AI for the museum, the art gallery, only for art so it does not go into the world until we know all the consequences.”³⁰

This notion of withdrawal from AI reminds me of an Arte Povera strategy. *The City of Broken Windows* is indeed one of Steyerl’s “poorest” installations. Its understatement and lack of spectacle compared to other Steyerl installations shifts the visitors’ attention toward the real windows in the Manica Lunga, to the embodied experience of the place, in a celebration of thinking, feeling, listening, reading, and walking bodies in the museum. Such a strategy of celebrating the process of phenomenological reduction of experience to its basic elements by people able to apprehend them and appreciate them was precisely the “attitudes become form” sought by the Arte Povera artists, from Marisa Merz to Giovanni Anselmo—artists who were contemporaries of Calvino and Eco and also developed their work in Turin, where they still live today.

Arte Povera emerged after a period of change in Italy, marked by political, social, and economic unrest. While the movement’s predecessors believed in the need for a fusion between high art (autonomous) and applied art (design) and in an alliance between science and art for the purpose of achieving social justice through modernization in a neo-Bauhaus perspective, the Arte Povera movement was based on the withdrawal from a celebration of technology and on the embrace of anti-spectacular, embodied practices based on the phenomenology of experience. The term Arte Povera—literally, “poor” art—was coined in 1967 by Italian art critic and curator Germano Celant, who appropriated it from the Polish experimental theatre director Jerzy Grotowski’s notion of “poor theatre.” Generally, Arte Povera is defined as an art of heterogeneous and “poor” materials and techniques. It is certainly true that these artists employed simple techniques such as covering a surface with a ball point pen (Alighiero Boetti) or making a plaster cast (Giulio Paolini) or knitting (Marisa Merz); humble materials such as coal (Jannis Kounellis), twigs (Mario Merz) or glass (Luciano Fabro); and simple processes such as freezing (Pierpaolo Calzolari), twisting (Anselmo), or creating chemical reactions (Gilberto Zorio). Their work is, however, much more complex than this. Arte Povera aesthetics are grounded in the belief that the phenomenology of experience (the “here and now”) and the notion of “process” are at the basis of art’s vitality. They created a body of artworks that was original, free-spirited and completely unconventional. They were not dogmatic. They expanded the fields of painting, sculpture, drawing, performance, photography, and often moved from one medium and technique to another without concern for any “signature” style. Their practice spearheaded what later became known as installation art. They employed everyday techniques to shape humble materials—both natural and artificial—into artworks that generate meaningful experiences in the audience.

What would an Arte Povera installation by Hito Steyerl look like? Maybe it would look like this: two normal sized flat screens, at opposite ends of a 140-meter-long gallery built in the seventeenth

²⁹ Ibid., p. 22.

³⁰ The lecture was held on December 12, 2018.

century, and today a white cube, and big subwoofers sitting on the floor, not even hanging on the walls, along the walkway, sound, vinyl lettering on the walls and windows. Fundamentally it is a low-tech exhibition, exploring issues related to high tech and the power connected with it. Steyerl withdraws in this installation from what one might expect: a very lavish immersive environment that could look like a studio where computer games or characters are being tracked and scanned to become figures in the artificial world of digital film. She retreats to this minimal position in order to maximize the experience for viewers walking through the space, as if the two videos were nothing more than footnotes in that experience, encouraging them to observe more carefully the space they are in, the glass of the windows, and themselves in the space.

In *Broken Windows*, the engineers are oblivious to the violence of their acts, as they work on glass that is no longer a membrane dividing the inside and outside of a building to allow for light to pass and vision to take place. In *Unbroken Windows*, intruders have already passed and penetrated the domestic environment of abandoned houses to rob or squat. Here, the windows are long gone and due to lack of funds to repair them, they are boarded up, in decay. Consciously, however, citizen-artists and war veteran-artists take them on, and the act of hand painting rather than digitally printing illusions produces a new form of window – windows of consciousness, windows of freedom for humans in alliance with paintbrushes, pigment and wood. These are not liquid-crystal screens; they are screens that the visual regime of cameras cannot penetrate, like caves or remote museums on the top of hills.