

## Coded Borderscapes. Locative Media, Memory and Migration in ManifestAR's *Border Memorial*

**Abstract:** Augmented Reality technologies challenge the conception of the virtual as a transcendental elsewhere. As Elizabeth Grosz puts it, the virtual is immanent in the real (Grosz 2001). The article will take into account the Augmented Reality Art of Mark Skwarek and his so-called AR interventions designed for smartphones screens, in order to explore how the virtual and the real unbind each other and how matter releases its potential. Mark Skwarek's virtual interventions try to restore the seamlessness of the borderland and reterritorialize the border by means of topological distortion. In *US/Iraqi War Memorial*, the artist overlays a virtual necrogeographic map of Iraq designed by a network of burial sites of deceased Americans soldiers and Iraqi civilians during the Second Gulf War. In the *Border Memorial: La Frontera de los Muertos*, the traditional Mexican festivity El día de los muertos has been uncannily translated into a memorial that unveils the scope of the loss of life and reveals the places where human remains have been found along the border. Skwarek's art comes alive on smartphones screens as tridimensional coffins or Oaxacan traditional calaca skeletons: these objects are digitally designed and superimposed in the actual field of view to revive the humanity and reality of the immanent Other (Mezzadra 2012). The two interventions display the sites where memory turns into matter and vice versa: by following Homi Bhabha's *Location of Culture* (2004), it will be argued that the virtual image is the blasphemous cultural transduction of the physical space through which newness enters the world.

**Keywords:** *Keywords: augmented reality, blasphemy, intervention, memorials, architecture, visual media*

### Augmenting Visual Culture and Border Politics

Still, they move. Bodies of migrants who did not survive the clandestine passage from Mexico into the US through the North American desert, while leaving instantaneous digital memories of their movement. Digital ghosts trapped by GPS coordinates trigger the movement of living bodies inside the complex architecture of the American borderland. ManifestAR's augmented installation *Border Memorial: La frontera de los muertos* documents and re-actualizes the memory of the migrants who died in the act of crossing, showing the relation between the US/Mexican border and locative media technologies.

Not only does ManifestAR's augmented reality art afford for a counter-representation of Southwestern US-Mexico borderland by superimposing visual data into the geographical location, but, by using mobile phones localization features, it also opens a discussion on the reconfiguration and complexification of the border, exposing it to a postcolonial critique. In so doing, it also provokes us into a re-assessment of the compound word *mobile medium* as a technology that is

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moved through space, or that moves itself (like drones or satellites). I understand mobile media as that which produces mediated movements inside a physical and digital grid. In this paper, I discuss the augmented qualities of contemporary borders as assemblages in which economies, technologies, politics, architectures and cultures conjoin. Far from being a simple wall or a line drawn on the sand, borders have become heterogeneous and mobile *dispositifs* that selectively include and exclude migrant subjectivities into and outside the space of Western citizenship, yet those stakes are far more visible at the location of the border turning the steep line on the sand into a *borderscape*, an intricate network of portable segregation.

Indeed, visual culture and architecture are deeply entangled with the innovation of American warfare policies. In two different books, visual culture theorist Nicholas Mirzoeff and urbanist Eyal Weizman respectively discuss the spectacularization of the Second Gulf War, and the connection between urban and housing policies and the permanent Israeli colonial warfare against Palestinians.<sup>1</sup> Despite their different focus, the two studies share the argument about the western gaze as mediated by assemblages that are used to de-humanize the Other –Iraqi or Palestinian. While Mirzoeff argues that the militarization of everyday spaces is deeply rooted in the relation between the massive production of images broadcast via televisual technologies and the mobile and fixed spatialities of the suburb (the home theater or the SUV's exoskeletal protection), according to Weizman, the very creation of infrastructures for the communication of people, goods and data (such as antennas and highways) has strategically served the slow colonization of the Palestinian territory creating differential spatiotemporalities for Israelis and Palestinians.

Like mobile phones, borders are now portable. By the end of this paper, I will argue that software is a space for struggle and negotiation because the use of software is not limited to surveillance of pre-existing spaces. Code itself produces spatialities and subjects whose techniques of the body are tightly conditioned by software and, as a matter of fact, deeply embedding code in their ontogenesis.<sup>2</sup> If portable devices inaugurated a new visual era of ubiquitous surveillance and self-perfectioning algorithms creating patterns of knowledge through the parsing process of visual information, visibility on the network is a crucial point to be discussed when studying locative media. The argument from the side of resistance also takes the dichotomy between visibility and invisibility into account, where the ability to be transparent stands for the possibility to be seen and to interact with digital networks. Invisibility of the code inside coded spaces works on both sides for the planner/developer and the citizen/user: the more the code permeates reality the more border subjectivities become invisible.

Although new media theorist Lev Manovich argues that we should replace the old binary opposition between visibility and invisibility with fields and functions bearing specific value for each point of the networks,<sup>3</sup> what now stands for visible

<sup>1</sup> See Nicholas Mirzoeff, *Watching Babylon: The War in Iraq and Global Visual Culture* (London and New York: Routledge, 2012) and Eyal Weizman, *Hollow Land: Israeli's Architecture of Occupation* (New York: Verso, 2007).

<sup>2</sup> Rob Kitchin and Martin Dodge, *Code/Space: Software and Everyday Life* (Cambridge, Mass.: The MIT Press, 2011).

<sup>3</sup> Lev Manovich, "The Poetics of Urban Media Surfaces", *First Monday*, 4 (2006).

or invisible is being present both in the digital layer and on the physical ground, leading to the possibility to be parsed, managed and controlled even though not connected to digital networks. In the artwork I discuss in this paper, borders are invisible and yet they do matter because they permeate everyday life serving as matrix for the subjectivities transiting across them. According to Eugene Thacker and Alexander Galloway instead, this logic is at the core of the discussion about tactical media, those media that tactically open cracks inside the networked heterotopy. Galloway and Thacker argue that if existence is the science for control, nonexistence is the tactic for future media affording the flight from the protocological structure of contemporary cyberspace. To be existent on a network equals to be responsive to a range of limited parameters as codified bits of culture: face-recognition algorithms, for example, are permeated with late 18<sup>th</sup> century Lombrosian criminal theories.<sup>4</sup>

Contra Galloway and Thacker (but perhaps through a productive misreading), the San Diego-based collective Electronic Disturbance Theater 2.0 (EDT 2.0) calls for a visibility of transborder subjectivities, operating with hacked mobile phones that populate the Global Positioning System, turning it into a Geo-Poetic System. The Geo-Poetic System leaves tracks on the physical ground and the GPS map.<sup>5</sup> For EDT 2.0, tactical media are not that which is nonexistent to a node of the network, but that which transduces that network into something else. And that is the function of techno-geographical blasphemy. By calling ManifestAR's intervention blasphemous, I draw on Homi Bhabha's concept of cultural blasphemy<sup>6</sup> and on Donna Haraway's cyborg as illegitimate offspring of militarism and capitalism.<sup>7</sup> As it will be shown later in detail, ManifestAR's use of commercial platforms such as *LayAR*, transduces the flow of informations driving the movement of users who re-perform the US/Mexican Border augmented architecture with a different pace and in different directions.

The tactics adopted by ManifestAR is the use of information visualization fueled with data about the number and location of the death of Mexican migrants. In so doing, it redesigns a geography of mourning in a tactical memorial as a form of visibility and resistance. *Border Memorial's* calacas, like Haraway's cyborgs, are coded with irony.

The use of calacas, the Aztecs' traditional effigies, witness Mexican layering of the colonial experience, the Spanish colonialism who left *el día de los muertos* as an occasion of religious syncretism, the economic colonialism inaugurated by the US *geistarbeite Bracero Program* in the first years of the 20<sup>th</sup> century, and finally the outsourcing policies of the *maquiladora* system coming along the NAFTA agreement in the 1990s.<sup>8</sup> In particular, in the name of Mexican modernization, the *maquiladoras* technological industry displaces rural families calling for cheap labour, discouraging higher education in order to produce hardware and software as the material core of the culture of mobile media.<sup>9</sup> The diffuse memorial scattered across the border challenges the Nation-State geography by deforming its

<sup>4</sup> Alexander Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis and London: Minnesota University Press, 2007), 136, and Sarah Kember, "Gender Estimation in Face Recognition Technology: How Smart Algorithms Learn to Discriminate", *Media Field Journal*, 7 (2013), <http://www.mediafieldsjournal.org/gender-estimation-in-face-reco/>.

<sup>5</sup> Electronic Disturbance Theater and b.a.n.g.lab, "Geo Poetic Systems (GPS): Fragments, Fractals, Forms and Function Against Invisibility", *Trans-Scripts*, 33 (2013), 290–304.

<sup>6</sup> Homi K. Bhabha, *The Location of Culture* (London and New York: Routledge, 2004 [1994]), 226.

<sup>7</sup> Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (London and New York: Routledge, 1991).

<sup>8</sup> Enrique Dussels Peters, "The Mexican Economy Since NAFTA: Socioeconomic Integration or Disintegration?", in Dieter Plehwe, Bernhard Walpen and Gisel Neunhoffer, eds., *Neoliberal Hegemony: A Global Critique* (London and New York: Routledge, 2006).

<sup>9</sup> Ursula Biemann, *Performing the Border*, 1999.

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boundaries and lighting up other stories from contemporary exploitation.

## Geographies for the Mourning: Postcolonial Tactics of Re-memory and Re-implacement

ManifestAR's augmented art aims at filling physical public spaces with data that are not supposed to be located there. Before *Border Memorial*, John Craig Freeman and Mark Skwarek of ManifestAR coded other locative art interventions such as *ProtestAR* and the *US/Iraqi War Memorial*.<sup>11</sup> Both interventions work by connecting smartphones to the GPS network and to the *LayAR* server. In this triangulation (user/server/satellite) the intervention itself *takes (over the) place*, in that it recodes space as open by making the political and cultural issues of the locale visible.

Following the protest taking place in Zuccotti Park during the Occupy Wall Street movement in 2011, ManifestAR started the project *ProtestARs* inviting people to take pictures or videos of themselves holding up banners and posting them on the *ProtestARs* website together with Zuccotti Park GPS coordinates. The submitted videos and .gif images were automatically shown in the Augmented Reality layer of the *LayAR Browser* in the cleared out plaza that was eventually turned into a post-modern virtual collage.

The digital overtaking of Zuccotti Park stresses how bordering policies are active also *inside* the US national space, separating the 99% of US citizens and Wall

<sup>11</sup> See ManifestAR, *ProtestARs*, 2011, <http://protestars.wordpress.com/>, and ManifestAR, *US/Iraqi War Memorial*, 2012 <http://usiraqiwarmemorial.wordpress.com/>.



Fig. 1: ManifestAR and Mark Skwarek, *ProtestAR*, digital composition <http://protestars.wordpress.com/>, 6 October 2011

Street financial elites. In *Us/Iraqi War Memorial*, their first augmented memorial, ManifestAR started to work with the displacement of distant memories taking over the American homeland: the memorial consisted in a map of tri-dimensional coffins covered with stripped and starred flags or modeled in bare wood carved with Arabic words such as 'aduḥ' that ironically translates 'enemy' in Arabic. A



single casket was designed for each of the 52,036 recorded casualties as reported by *The Guardian* and the Wikileaks War Log. This necrocartographic data map was then offset to the latitudes of the US East Coast in order to be visualized by smartphone users through the *LayAR* browser application. Those data have been recollected and visually offset in a gesture of rupture: the signifier (the map) and what it represents (the territory) are violently disconnected both geographically and linguistically by the use of the ironic inscription digitally engraved in the virtual casket. Using the Augmented Reality application, the visitors of the memorial re-map their reality by including the distant memory (the onscreen three dimensional object) that dis/continues and intrudes the actual field of view through geolocalization technology. The perception of digital objects on the physical ground generates a sense of angst and loss affecting the body with a layered virtual geography that cuts across the physical surface.

This is what Jason Farman, after Edward Casey, calls *implacement*. Implacement is that which “locates our sense of proprioception with others and



Fig. 2: Mark Skwarek and John Craig Freeman, *US/Iraqi War Memorial*, digital composition, <http://usiraqwarmemorial.wordpress.com/>, February 2012

with objects in a space. Implacement serves as the counterpart to displacement which ‘represents the loss of particular places in which their lives were formerly at home’.<sup>11</sup> *Border Memorial* shares the virtual overtaking of place as an act of resistance with *ProtestARs*, and displaces the movement of the visitors as it happens in *US/Iraqi War Memorial*. In this essay, I argue that augmented memorials like *Border Memorial* work in two different directions: on the one hand, *La frontera de los muertos* makes the political and cultural stakes animating the geography of the borderland visible, on the other it opens a space for contestation of the United States’ neocolonial policies, transducing the public-but-bordered space of the Nation and the enclosed space of its cultural dimensions.<sup>12</sup> In fact, not only does *Border Memorial* take place in the US/Mexican borderland but a section of the

<sup>11</sup> Jason Farman, *Mobile Interface Theory: Embodied Space and Locative Media* (London and New York: Routledge, 2013), 39.

<sup>12</sup> Here I refer to Appadurai’s book *Modernity at Large* in which the cultural theorist argue the Nation-State produces itself through memorials and museum as its cultural dimension. See Arjun Appadurai, *Modernity at Large* (Minneapolis and London: Minnesota U. P., 1996).

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Southwestern desert virtually takes over the location of the American temple for contemporary culture: the court of the MoMA in New York.

Border Memorial addresses the issue posed by the reconfiguration of borders as spaces generated by code, so that locative arts such as ManifestAR's can respond to the augmentation of such architectures and their becoming concrescent networked geographies. Furthermore, the memorial stresses the relation that the artists undertake with physical – yet not 'natural' – landscapes and their 'perversion' through coding practices that bring about questions on the movement of migrant bodies across the border's new transparent skin. Skwarek's and Freeman's artworks lie in the conjunction where the body emerges as a digital datum in GPS geo-localization systems and where memory, in the form of virtual images, is poured out of the surface of mobile screens into a world that obeys the laws of Newtonian physics.

The border cuts space but there is no void between the regions it splits: on the contrary, it causes an intensification that allows new objects to ingress the world. As the Chicana theorist Gloria Anzaldúa wrote, the border is a living and productive *herida abierta* and what it produces is a borderland where new cultural forms and new resistances grate, bleed and congeal:

The U.S.-Mexican border es una herida abierta where the Third World grates against the first and bleeds. And before a scab forms it hemorrhages again, the lifeblood of two worlds merging from a third country –a border culture. Borders are set up to define the places that are safe and unsafe, to distinguish us from them. A borderland is a vague and undetermined place created by emotional residue of an unnatural boundary. It is in a constant state of transition.<sup>13</sup>

<sup>13</sup> Gloria Anzaldúa, *Borderlands/La Frontera: The New Mestiza*, Chicana Studies (San Francisco: Spinsters/Aunt Lute, 1987), 3.

Despite being economically and technologically restrained to those who can afford it, creating a *de facto* class-bounded space, AR art challenges the idea of the museum as a white cube where the virtuality of dead objects is preserved. The ubiquitous aura of the *alibi et alias* is thus the augmented quality of the *hic et nunc* of these site-specific pieces of art: the place of production, performance and reproduction of these projects is not unique, they happen in different times and in different spaces at once. The artists' interest in memorials in the form of augmented reality as a way to both celebrate and honor the deceased, is an invitation to rethink public space, citizenship and the technology regulating them while silently running in the background. Borderlands are areas in which, as Sandro Mezzadra and Brett Neilson suggest, "there is a certain intensification of political and even existential stakes that crystallize relations of domination and exploitation, subjection and subjectivation, power and resistance".<sup>14</sup> I would also add that there is an intensification of technological investment contrasting with the aesthetics of ruin to which they seem to be condemned. Geolocalization technologies, used in border patrolling as well as in social media, are virtual-actual nexuses catching the body into the networks through chips in electronic passports, SIM cards, ATM

<sup>14</sup> Sandro Mezzadra and Brett Neilson, "Between Inclusion and Exclusion: On the Topology of Global Space and Borders", *Theory, Culture & Society*, 29.4-5 (July-September 2012), 71.

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devices, and through biometric identification that attach even the offline body to the online grid. Skwarek and Freeman's perversion of code brings virtuality from the folds of reality into the actual field of view by subverting the use of ubiquitous computing and surveillance devices that normally silence themselves, their own bias and the processes that brought them into the world.

These subversions of the code are what Bhabha would call blasphemies. According to the cultural theorist, a blasphemy is not simply an insult to a sacred text, it is rather the betrayal of its poetic form as it is translated into prosaic language.<sup>15</sup> In this case, the use of blasphemous code unveils the *mise-en-scene* of cleared out and bordered spaces, a cultural location turned into the desert of the real. Donna Haraway, on the other hand, calls cyborgs blasphemous, because blasphemy "protects one from the moral majority within, while still insisting on the need for community".<sup>16</sup> Blasphemy, that is, grants both continuity and discontinuity by breaking the code from the inside, it is nonexistent precisely because it is not transparent and it interrupts the representation, not by hiding itself but in a gesture of full presence. In the same way, Skwarek and Freeman's memorials are doubly blasphemous in that they remap coded-managed cartographies and tactically subvert the information-fueled applications (AR browsers) with silent uncanny tridimensional images. The immersion into the virtuality of the memory as tactics for the counter-representation of the colonial space generates a sense of implacement, a new sense of being-in-the-world. The GPS coordinates of *Border Memorial*, while displacing the movement of the visitors on the physical ground and replacing the silenced casualties caused by border policies, re-implace the movements of the visitors into a geography of the mourning.

<sup>15</sup> Bhabha, *The Location of Culture*, 226.

<sup>16</sup> Haraway, Simians, *Cyborg and Women: The Reinvention of Nature*, 149 .

In the following sections, I will focus on the two directions undertaken by the digital memorial reworking of the geography of Mexico and that of the United States: memory as a tactic of resistance *and* presence, and implacement as a means for transduction of the physical-digital infrastructure.

## In Bits and Bones: Memory and the Immanent Outsider as a Transductive Actor

In this section, I will look more closely at memory as both matter of the memorial and tactics for counter-representation of border-crossers. In particular, the counter-representation of the flow of migrant subjectivities whose lives are welcome as labour but whose participation to local culture is constantly silenced. The silent and uncanny memorial for the deceased becomes then a celebration of the living. From the memory of the server to the memory of the mobile phone, the map drawn by the ensemble of data represented by the digital *calacas* engenders the virtuality of the memorial in two ways: on the one hand, by exploiting the

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productive confusion between the digital and the virtual (as something not real, a mere mapping devoid of the thing mapped); on the other hand by bringing silenced data into visibility. In this way, *Border Memorial* offers an occasion to remember migrants living inside the national space, even if deprived of civil rights.

Virtuality according to Deleuze's reading of Bergson, is not that which is not real, on the contrary, it is always real but not actualized yet. Actuality is not opposed to reality, but to the virtual: the lines of differentiation drawn by virtuality when they emerge on the plane of the actual are all real but potential, they lie outside the range of limited possibilities, they point to futurity rather than to the future.<sup>17</sup> By bringing the memory of the deceased into visibility, in order to remember the living, *Border Memorial* works then as a necropolitical tool questioning the space of the Nation and the identity of migrants.

<sup>17</sup> Gilles Deleuze, *Bergsonism* (New York: Zone Books, 1991), 113.

In fact, by visualizing the excess of border-architecture, *La frontera de los muertos* focuses on the inclusion of outsiders rewritten in a code other than the one used by mainstream media. As Mezzadra and Neilson suggest, borders too are not fixed in time, they are a phase of topological deformation of space where political stakes intensify and where relations of power and processes of subjectivation materialize in the most visible and violent form. In this scenario, augmented borders are not technologies of selective exclusion, but rather of differential inclusion as they produce the subjectivity of the illegal worker, the unauthorized and yet recognized "immanent outsider", the subject coming from elsewhere as a key "piece" of the neoliberal machine. In fact, far from being only the subject of exclusion, the "immanent outsider" also becomes a "key actor in reshaping, contesting and redefining the borders of citizenship".<sup>18</sup> The immanent outsider's agency is that of remodeling the space and deforming it, creating spaces of exceptions within and outside the borders. These spaces are heterogeneous and far more complexly distributed than in the Eurocentric West-East and North-South diagram: indeed, they are incorporating each other like in an emulsion in unexpected ways. The world-making process of globalization is reproduced in the richest countries as well, where part of the population is cast out from participation to its wealth. Finally, the immanent outsider does not need to move (and in fact s/he is "invited" not to do so) to be caught in the mechanisms that facilitate the proliferation of borders.

<sup>18</sup> Mezzadra and Neilson, "Between Inclusion and Exclusion", 71.

*Border Memorial* renders these processes and materializes them in bits and bones on the screen by reprogramming and perverting the geography of the public and that of the museum space turning them into suspicious places. Of course, the physical body immersed in this virtual architecture is perfectly aware of the political stakes of the digital memorial; as a matter of fact, one must tune into it by browsing the layers available on the application. The digital flâneur is thus urged to connect to an alternative arrangement of space which is neither coded by the State nor by private companies, but is managed through a completely different scheme although it is made of the same matter (SIM cards, chips, GPS and face



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recognition softwares). This technological assemblage – the smartphone – reproduces the affect of events that were not experienced in the first place neither in a shared space nor in a shared time with the very event the memorial is linked to, through perception. This happens because, according to Elizabeth Grosz's reading of Bergson, past and present are not variations of degrees in strength but they are indeed different in kind, to the same extent that remembrance and perception are; the proximity of the (virtual) object to the body dangerously connects memory and perception short-circuiting them. As she puts it:

The present as it is by perception and action, is fundamentally, and paradoxically, linked to space. The distance of an object in space is a direct measure of the threat or promise of that object in time: the nearer the object, the more immediate its impact on the perceiver. Space signifies or represents our near future, that future which is already tied to the present, that future which is implied in or posited by our current perceptions and actions. Space, perception, objects, action are all aligned through my body's location and placement as an object among the other objects in the world.<sup>19</sup>

<sup>19</sup> Elizabeth Grosz, *The Nick of Time* (Crows Nest: Allen & Unwin, 2004), 106.

Threat or promise are two equal but opposite affections that intensify as the object is approached both in space and in time. That which is near is threatening and promising, affecting a region or all of my body, exciting humors from my heart to my hands and to my legs with expectation or with fear, urging my body to movements of curiosity or escape. The subject crossing the sensitive augmented skin of nation-states, is surveilled by helicopters, cameras and drones for it threatens to re-configure its immune system. These affects, modulated by mainstream media from the border to the screens, from the screens to the body are subverted and performed in the AR art by Freeman and Skwarek. Immersivity, the desire to penetrate the opaque surface of the screen as if it were transparent, collapses. The body is already in there and its presence is localized by the smartphone antennas and screens. They no longer act as walls where reality is narrated and represented; instead, they are mobile technologies performing the network from the moment they are turned on. The contemporary contradiction that wants the body free to move while it is performing a hub of a web also reflects the fact that the only haptic border is that of the screen. As if it were a phantom limb, visitors sense the object yet they cannot touch it, they cannot touch the alien who haunts their visual field: the skeletons are silent and indifferent to the pace of the body that navigates the architecture they build, the visitors' bodies can even penetrate their polygonal surfaces, still the screen is the only touchable thing.

On the border of the screen, the body synesthetically senses the virtual objects, relating to them and creating a temporary and fluid architecture. The body becomes part of the architect's concern in the process of designing as a part of the design itself. In fact, the visitor's proprioception, the capacity of the body to register displacement within the body, becomes a pivotal element of this deforming



Figs. 3-4: José Guadalupe Posada – *La Garbancera* (*La calavera Catrina*, upper, and *Calaveria*, lower), zinc etching, 1910-1913

space. Canadian philosopher Brian Massumi envisions the topological turn in architecture as a call to pay attention to the process and the movement rather than to the separation between pure form and matter. In his view, process is not a momentum bounded by two forms (the virtual idea and the end-product) but a proliferation of forms stemming from unpredictable movements.

As a consequence, the architect's role is that of a catalyst for newness and emergence of objects and spaces entering the world. There is no such a thing as pure form, as the whole process of design-building-exhibition and dwelling is impure from the beginning for it engulfs parameters that do not respond exclusively to physical laws. In

fact, they also resonate with economical reasoning and with the afterglow of the project as it is donated to everyday life. In the same fashion, visibility and movement are closely connected, because “actual traces of the virtual are always effects of movement”:

When we see one object at a distance behind another, what we are seeing is in a very real sense our own body's potential to move between the objects or to touch them in succession. We are not using our eyes as organs of sight, if by sight is meant the cognitive operation of detecting and calculating forms at a distance. We are using our eyes as proprioceptors and feelers. Seeing at a distance is a virtual proximity: a direct, unmediated experience of potential orientings and touches on an abstract surface combining pastness and futurity. Vision envelops proprioception and tactility, by virtue of past multi-sense conjunctions whose potential for future repetition our body immediately, habitually “knows,” without having to calculate. Seeing is never separate from other sense modalities. It is by nature synesthetic, and synesthesia is by nature kinesthetic. Every look reactivates a many-dimensional, shifting surface of experience from which cognitive functions habitually emerge but which is not reducible to them. It is on that abstract surface of movement that we “live” and locate.<sup>20</sup>

<sup>20</sup> Brian Massumi, “Sensing the Virtual, Building the Insensible,” ed. by Stephen Perrella, *Hypersurface Architecture*, 68.5/6 (May-June 1998), 21.

Thus, what is really affecting and touching the body is the distribution of the virtual *calacas* on the physical ground. The very relation in space between the virtual objects, and between the virtual objects and the human body creates an

architecture of mourning. As the artists recall in their statement, the project was designed to “visualize the scope of the loss of life by marking each location where human remains have been recovered with a virtual object or augmentation”.<sup>21</sup> Here, the scope does not refer only to the count of casualties but also to the opportunity for action of the camera and the field of view it frames. Thus, the recollection of the focal points within this virtual architecture is an uncanny urgency for movement and contemplation. In particular, in the *US/Iraqi War Memorial* and in *Border Memorial*, the simulation of “hauntedness” of the space replaces the celebratory quality of the classical memorial that crystallizes a point in time and starts off the narration of a new history. Instead, the contemporary memorial is continuously remapped and reterritorialized by the visitors’ random path-making. At the same time, the body experiences the uncanny feeling that something it knows, and that it has long tried to send back beyond the borders of chaos, is actually here turning its homeland into a suspicious place.

<sup>21</sup> ManifestAR, *Border Memorial: La Frontera de Los Muertos*, 2013, <http://bordermemorial.wordpress.com/border-memorial-frontera-de-los-muertos/>.



Figs. 5: Mark Skwarek and John Craig Freeman, *Border Memorial: La frontera de los muertos*, digital composition, <http://bordermemorial.wordpress.com/>, January 2012

The ubiquitous ghosts perform the virtual architecture each time a visitor at the MoMA, access the Internet via the LayAR application to view the digital landscape of *Border Memorial*: from the hardware of the smartphone located in New York to the hardware of the server (probably located in a Scandinavian country), several worlds open and connect to each other to finally render onscreen the memory of the dead.

Memory is the very matter of a memorial, molded by one’s sense through perception. A brief detour through Peter Eisenman’s solid memorial for the Murdered Jews of Europe in Berlin allows us to map similarities and differences with Freeman and ManifestAR’s memorial and highlight how virtual memorials work. Designed following the Bergsonian diagram, according to which what runs from pure memory to perception is not a difference of strength but of kind, Eisenman’s memorial consists of a grid of dark grey stelae installed in a sloping ground that contrasts the undulated surface created by the ensemble of the stelae’s top surfaces. This differential space, and the abrupt variation in perception it triggers, materializes the sensation of loss and angst from a remote region of

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<sup>22</sup> Peter Eisenman, Luis Galiano, and K. Michael Keys, *Blurred Zones: Peter Eisenman Architects, 1988-1998* (The Monacelli Press, 2003), 314.

memory that the visitors experience as they immerse their body into the grid. Eisenman's deep refusal of symbolic representation, engendered by the traditional memorial, is actualized in the choice of the stelae as opposed to images, symbols or texts. In his memorial (and in his own words), "the time of the monument, its duration is different from the time of human understanding".<sup>22</sup> Thus it could be argued that what the Berlin Memorial intercepts is time as duration while the traditional memorial captures an instant in space. In fact, its extensive structure is not a point to go to and stop, but rather a plan to get lost in, where space and time stretch together: the architectural structure interacts with the body and transduces memory into perception. According to Henri Bergson, actual sensations occupy definite portions of the body while pure memory does not interest any part of it and does not urge it to action unless memory is actualized in the form of image. The virtual image affects the body with virtual sensations pushing it to movement in space and in time:

Memory, actualized in an image, differs then profoundly from pure memory. The image is a present state and its sole share in the past is the memory from which arose. Memory on the contrary, powerless as long as it remains without utility, is pure from all admixture of sensation, is without attachment to the present, and is consequently unextended.<sup>23</sup>

<sup>23</sup> Henri Bergson, *Matter and Memory* (New York: Zone Books, 1988), 140.

For Bergson, then, matter holds multiple and latent memories: the work of the artist or of the architect is to elicit and excite such states by remodeling matter in order to return memory in the form of affect and perception. But whilst Eisenman's architecture is strictly linked in memory and matter with Berlin, Skwarek's digital memorials are ubiquitous. In fact, Eisenman's grid, located between Brandenburger Tor and the Tiergarten was seamlessly embedded in the urban fabric of voids that have characterized Berlin for over half a century, its shape and austerity still reminds today the wounds of war despite Berlin's contemporary relentless towering skyline. Instead, Skwarek and Freeman's process of design (coding), construction (calculation) and exhibition (reproduction) take place in three different places; as a result it is always out of place, unhomely and blasphemous.

## Tame Your Code: The Blasphemy of Transduction in Generative Architectures

This final section interrogates how augmented memorials such as *Border Memorial* link the memory of the past with a politics for the future through coding practices. In fact, *Border Memorial* brings here and now the humanity of the deceased immanent outsiders. In the process of coding, it overlaps the space and time performing the memorial's unhomely architecture of despair. The AR intervention

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focuses on the ability, possibility and the chance for the body to act and move through space and time from either sides of the border. From this standpoint, they also account for the ones who cannot move and who are caught in the machine of post-colonial capitalism beyond the borders. In the digital memorial, the visitors' movements are part of the installation itself, and they follow paths triggered by the installation but not determined by it: the in-between space of the memorial draw an architecture that never crystallizes into pure form.

While discussing Jameson's third space of postmodernity, Homi Bhabha sees the border as the privileged site for creation of transductive identities. In *The Location of Culture*, he argued that the liminal space of the border is an invitation or a promise for the future; to live at the border of one's own identity – be it of class, race or gender – grants the opportunity to move beyond the settling down of identities themselves as they are opened to a space of flow that allows hybridization. In temporal terms as well, the present cannot be thought like an interruption between the past and the future as it rather expands into our contemporaneity, elastically involving remote regions of past and future in the act of the present world making.<sup>24</sup> In this sense, augmented spaces of control and mainstream corporate media work together to narrate the present and its immediate future without its 'beyond', the space as a gated citizenship that selectively include migrants inasmuch as labour but not as humans: living on the borders (beyond and across them), then, leads to inevitably sense the unhomeliness and the inconsistency of the postcolonial condition; as Bhabha argued:

<sup>24</sup> Bhabha, *The Location of Culture*, 4.

Being in the 'beyond', then is to inhabit an intervening space, as any dictionary will tell you. But to dwell 'in the beyond' is also ... to be part of a revisionary time, a return to the present to redescribe our cultural contemporaneity; to reinscribe our human, historic commonality; to touch the future on its hither side. In that sense, then, the intervening space 'beyond', becomes a space of intervention.<sup>25</sup>

<sup>25</sup> Ibid., 7.

Such a space is intervening in that it grows from the folds of reality and in between territories and phases of modulation of actual spatialities. *Border Memorial* generates a space for intervention where the identities of the dead or of the visitors are pushed to their limits, creating for each actualization (each connection to the LayAR browser), an instance of new relational space. In this sense, these memorials design fluid and ever expanding cartographies. The virtual memorial performs with physical objects and bodies what generative design draws by calculation.

Generative design is based upon the idea that the designer/programmer triggers a project to grow on its own according to patterns of repetition and variation, from a simple sketch, evolving into more complex forms, naturally expanding like plants or snowflake crystals. The algorithm individuates such processes as it conditions but does not determine the evolution of the generative object. According to



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different styles, algorithms can be exclusively devoted to consuming data and incorporating change in order to strategically control the processing and flow of information as it happens in surveillance systems, or be open to crash and tactically create new and unexpected forms as it happens in Skwarek and Freeman's memorials. In fact, their virtual geography of movement grows out of a map of cardinal points that attract and repulse the bodies of the visitors who draw conditioned paths between one virtual object and another.

ManifestAR's code exceeds speech and writing as it consists of a text written by humans in a highly formalized grammar and language; a language which is neither natural to humans nor understandable by the machine. The written code is then an interface or a negotiation firstly because it is neither human nor machinic, but also because it is a special kind of writing that performs like a speech act. It acts upon the physical world in the moment it loops the algorithm in its flow, processes the information in the moment the software reads them and translates them in the language of 1s and 0s.<sup>26</sup> The code that builds these memorials reverts the bias that mobile technologies carry and performs a different kind of code/space. According to Rob Kitchin, a code/space deeply differs from a coded space in that a code-managed space is only augmented with functionality of softwares (like a system to reserve and retrieve books in a library) while in code/spaces, the software is embedded in its ontogenesis (like it does in airports).<sup>27</sup> If the border performs a certain kind of movement framed into a certain space, and the mobile phone as well produces a space and a time framed by its software, then what kind of space do these AR interventions perform? Skwarek and Freeman's memorials produce a space that locates itself in a digital-physical junction at different latitudes of the globe. They reproduce, in a variated style, the spatiality that a body entertains with the element of the cardinal architecture in the desert and the space they generate is of transductive kind. According to French philosopher Gilbert Simondon, transduction is a process of ontogenetic modulation of a dominion; in its unfolding, it poses different relational problems to be solved once at a time:<sup>28</sup> the body meets the digital objects and runs after them in curiosity or away from them in fear, the solution that visitors find is a step in the making of a new spatiality and in becoming space of the body. Code/spaces, according to Kitchin, "should be understood and conceptualized as relational and emergent spaces in which software frames the unfolding but does not determine it".<sup>29</sup> This is the logic of generative design that produces and reproduces itself according to patterns of repetition and variation introduced by calculation in different conditions. If the generative designs of nature reproduces similar schemes according to different actualizations like a crystal of ice, it doesn't mean that each crystal is determined to be designed in the same way. In fact, infinite environmental agents might affect its ingression into the world as a new object in that unique actualization of the space-time. This cardinal and bodily architecture expanding by relating the focal points that build it up, opens up to the error, to surrender, to the crash of the system or

<sup>26</sup> Geoff Cox and Alex McLean, *Speaking Code* (Cambridge, Mass., and London: The MIT Press, 2012), 35.

<sup>27</sup> Kitchin and Dodge, *Code/Space: Software and Everyday Life*, 72.

<sup>28</sup> Muriel Combes, *Gilbert Simondon and the Philosophy of the Transindividual* (Cambridge, Mass., and London: The MIT Press, 2012), 6.

<sup>29</sup> Kitchin and Dodge, *Code/Space: Software and Everyday Life*, 74.

to the seamless repetition of mathematical operations.<sup>30</sup> The differential identity is one of the trigger conditions for the movement evolving in continuous negotiations through which it draws borders and trace a network-like system. This structure is different from the postmodern pastiche. In fact, its complex grammar coordinates the various elements in the moment of their contact and hybridization. I would like to add to Guillermo Gomez Peña's "menudo chowder", where "stubborn chunks" stay afloat,<sup>31</sup> the idea of the emulsion. In the emulsion, temporal identities do not erase themselves but combine in new unexpected ways to return separated in either previous or in new forms according to contingencies. Here there might be stubborn chunks but they are crystallizations of whole assemblages together. In Simondonian terms, borderlands, as fluid cultural spaces produced by technical objects, are characterized by metastability, the property that allows a minimal variation to re-organize matter in a state of false equilibrium around a clot, a crystallization, an intensification.<sup>32</sup>

In Skwarek and Freeman's memorials, the digital event is a stranger element popping out from the visual field into the mobile screen. As Bhabha points out, it

... reveals the interstitial; insists in the textile superfluity of folds and wrinkles; and becomes the 'unstable element of linkage', the indeterminate temporality of the in-between, that has to be engaged in creating the conditions through which 'newness comes into the world'. The foreign element 'destroys the original's structures of reference and sense communication as well' not simply by negating it but by negotiating the disjunction in which successive cultural temporalities are preserved in the work of history and at the same time cancelled.<sup>33</sup>

If, as Bhabha put it, "translation is the performative nature of cultural communication",<sup>34</sup> as language *in actu* rather than *in situ*, it is also true that the target language of the conveyed message is what becomes actually modified in the act of translation, rather than the message itself. In the language of spatiality, the blasphemous act of the memorial as intervention is not of trans-lative nature, as the overlapping of coordinates would suggest, it is rather of trans-ductive kind for it undergoes a process of ontogenetic modulation. In this sense, ManifestAR's memorial are modulations of the medium and of the space they design according to architectures that are internal and external to the medium and different from the ones the medium was designed for. Skwarek and Freeman use the LayAR commercial platform to code deeply site-specific ubiquitous memorial that render onscreen the humanity and the post-humanity of the immanent outsider, paradoxically with images recalling mourning and inhuman violence. The political use of these digital objects and their positioning on the online grid and on the offline ground transduces the function of the hardware and the software individuating the ecological and economical processes, tracing new typologies of spatialities and delimiting their borders. In particular, the software that not only augments the potentialities of the spaces of modernity but generates and manages

<sup>30</sup> See Luciana Parisi, *Contagious Architecture: Computation, Aesthetics and Space* (Cambridge, Mass., and London: The MIT Press, 2013).

<sup>31</sup> Guillermo Gomez Peña in Bhabha, *The Location of Culture*, 219.

<sup>32</sup> Combes, *Gilbert Simondon and the Philosophy of the Transindividual*, 6.

<sup>33</sup> Bhabha, *The Location of Culture*, 228.

<sup>34</sup> Ibid., 228.

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them, thus becomes the privileged place for conflict and negotiations of identities at their limits.