Conflict Mediations

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27

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Contents

Visual Essays

Introduction

How to spatially mediate conflicts?

Armina Pilav, Marc Schoonderbeek, Heidi Sohn, Aleksandar Staničić

Four years ago, *Footprint* 19 presented a report on the conditions under which so-called contemporary 'Spaces of Conflict' were emerging at a time of seemingly interrelated global unrests. The issues discussed there ranged from the more typical, almost historical or classical examples of spatial conflicts, to migratory movements and ecological disasters. In order to deepen the spatial understanding of the intricacies of conflict and the spatial conceptualisations that have been theorised as a result, the current issue of *Footprint* extends that inquiry and elaborates on the specific role and agency that artistic reflections, cross-media inquiry and counter-tactics have in response to conflict as such, and to the spatiality of conflicts more specifically. Hence, *Footprint* 27 musters a selection of papers presented at the 'Mediating the Spatiality of Conflicts' conference, organised by the Borders & Territories research group at the Faculty of Architecture of TU Delft in November 2019. This introduction is intended to clarify a number of key concerns with regard to the reasons and the line of reasoning that led to the organisation of the aforementioned conference.

Conflict

At the opening of the conference, we reflected on the proclaiming words of Marinetti in his Futurist manifesto dating back to the early twentieth century. In hindsight, Marinetti's manifesto constitutes a rather perverse and even macabre reflection of the spirit of that time, glorifying war, speed and violence. Of course, the eruption of violence a decade later, with the first of an overall global stretching of warfare, could not have been foreseen by the Futurists, and neither could the effects of their enthusiastic – but naïve – signing up for the 'fastest division' in the Italian army, namely the Lombard Battalion of Volunteer Cyclists and Motorists, have been properly assessed, as it ultimately resulted in the death of a large part of the first generation of Futurists. Still, for our contemporary sensitivities, the Futurists' glorification of war seems rather incomprehensible and is actually politically incorrect. The atrocities caused by wars and conflicts ever since have triggered an understanding of conflict as something inescapable, unavoidable, painful and traumatic, but also as something of defining importance to human culture. Even in the attempts to establish proper democratic societies, the notions of tension and conflict have become absorbed in the overall understanding of the workings of any society as both vitally important and something to be tuned down.[1] To this very day, the entire anatomy of contemporary political practices on the global scale, comprised of international entities negotiating for peace agreements and control of contested territories, is still framed as the continuation of war by other means.

Clearly, in recent years we have witnessed an array of conflictual spatial impacts, from the emergence of global terrorism, an increased militarisation of (public) space, political violence caused by the decreasing democratic nature of urban space and citizenship, an unprecedented increase in the control of citizens, the raise of populist, nationalist

or ethnic-supremacist collectives, massive forced displacements due to the wars in the Middle East and ecological crises to the straight-forward crumbling of sovereign governments. If we were only to list short daily summaries of the news bulletins of current conflicts, we would quite quickly realise the nature of its pervasiveness, its omni-presence and the continued relevance of this theme in our so-called ever-increasingly globalising world, in which, it needs to be reiterated, borders seem to be inclined to disappear but are actually quite frequently erected or reinstated. It could be argued that here too, new and emerging realities are catching up with us, most notably the current Covid-19 pandemic, although in our view, this would constitute only a superficial reading. These depicted general tendencies stretch much further than a 'simple' and temporary set of lockdown measures, although these are troubling in their own right. Conflicts continue to serve as intensified examples of spatial processes that happen in our cities, territories and landscapes, while the agency and destructive power of conflict remains an intriguing scholarly issue that has been argued over, and over again.

In fact, several scholars have recently started to point to the developments occurring in Russia during the transitional period soon after the collapse of the Soviet Union (roughly during the 1990s) as a prelude to the developments we see globally today. These scholarly debates refer are not only to the role that media and media strategies have played in helping Yeltsin's and Putin's rise to power as intriguing examples of micro-targeting constituencies. Equally importantly, and following Boris Groys, there seems to have been a fundamental role that the arts have played in constituting the very basis of plotting and masterminding these political developments through the use of techniques from literary and theatrical avant-garde practices and experimental insights at the time.[2] We were already warned by Bruno Latour that the extreme relativism of postmodernism was becoming counter-productive.[3] But substituting 'matters of concern' with 'matters of fact' seems to have failed in coming to terms with countering the contemporary populist tendencies and the deviousness of the players in the contemporary war(s) on truth and information.

Following up on some of the strange turns of events, most notably those originating in 2016/2017 with the election of Trump, Brexit, Russian hacking practices, the refugee crisis in Europe (with its police violence), the aftermath of the Arab Spring and Latin America's economic collapse, one could state that democracy is tending in the direction of becoming a reality-show and towards something that can be managed, planned, staged and manipulated. A postmodern world, in other words, devoid of meaning and significance, where anger and cynicism are the result of a lack of perspective and empathy, and where lies, half-truths and counter-truths have started to constitute a debate where the possibly agreed-upon terms of engagement are no longer present, nor are they very clear or well-defined. In these contexts, the non-violent governance of societies and transnational territories has become merely an afterthought at best. Nowadays truth is no longer self-evident; it has in fact become irrelevant and turned into a tactical weapon intended to confuse the other (usually rendered as 'the enemy').

Fortunately, though, there is also a counter-movement that has recently emerged from the student protests in Hong Kong, aimed at countering the rising influence of China's ruling party and using another model of (pop) culture as its symbol. Since these protests, Bruce Lee's utterance to 'be water' has started to propel the very basic principles of the overall tactics of local resistances world-wide, where political protesting entities reject fixed identity, constantly surprising their opponents with actions and appearances that seem to come out of nowhere, and that are unstructured, untraceable and seemingly random and unorganised.[4] The

interesting tendency is, therefore, that these developments in national and international politics have now been turned upon themselves and have started to work against the very power structures that had previously utilised them. This cat-and-mouse game is currently implemented globally, as the protests in Lebanon, the US, Chile, Spain and Iraq, to just name a few, attest.

Space

How do we cope with this highly problematic and critical state of affairs? First, and even though the 'spatial turn' had centralised the notion of 'spatiality' in contemporary disciplinary debates, the spatial mapping of conflicts still remains reasonably underdeveloped and, as a disciplinary field, it requires attention. In other words, the question is how the spatial dimension emerging from and evolving around disputed territorial demarcations can be investigated with a sense of precision, measurement, and attention to the agencies that these spaces constitute. An emphasis is needed on the intrinsic relation between the spatial and territorial dimensions of conflicts and the innate relatedness of tensions involving borders and bordering infrastructures for advanced control, where human bodies are scanned, mapped and identified within every border-scape. To be precise, the current attention to these issues focuses less on the spatial elements and strategies of exclusion than on the spatial aftereffects of conflict. This deterministic understanding of conflicts regards the drawing up of the border simply as a cause and the ensuing confrontation as the effect of their spatial implementation. History tells us it is much more complicated than that.

Conflicts indeed produce contested territories as well as international transitional movements and practices of law. Yet the possible deviation from this logic of cause and effect seems to have taken the wrong turn, as one should consider this straight-forward disentanglement of the one from the other irrelevant. Rather, within the context of the relationship between conflict and space, the entanglement of cause and effect into a consideration of simultaneity is significant, if not crucial. The act of drawing lines on a map to demarcate entities of identity (whether ethnic, political, religious, or other), followed by its implementation within the territory is already a projected, architectural act. But the border, as an architectural element that seems to inevitably emerge within spaces of conflict, has a certain agency as well. What the border 'does' should not be left unspecified. It is at the very locality of the border where agency transcends into forms of activation, types of actions and no-borders activisms in response to state-nation border controls.

Apart from what an architectural investigation of conflicts focuses on in particular, which sets of circumstances are framed by it, and what methodological approach is employed, conflict research should also clarify and indicate what exactly is spatially activated under these conditions. Perhaps this particular understanding of agency suggests that we need to revisit and re-engage with the term 'operative criticism' so eloquently brought forward by Manfredo Tafuri. In the late 1960s, Tafuri made a powerful point in his attempt to disengage architectural production and architectural reflection. The role of the historian and critic was to be cut loose from the propagandistic tendencies that had defined so much of modernist discourse at the time.[5] The disciplinary field of architectural history thus became disentangled from the field of architectural practice, a disentanglement necessary to bring to architectural historians the necessary distance to further their field of expertise with independence and seriousness. For sure, a reflective distance is important, but at the same time we have started to realise how these reflections play a role in the larger contexts of discursive, disciplinary and social debates and how these have become part of the scholarly agenda. The practical side of architecture and its tools of spatial investigation is of great benefit in these circumstances.

Mediation

The resolving of conflicts can be considered an art in itself, be it political or diplomatic. Nevertheless, the countering of political and/or social developments through direct protest and opposition arguably seem to only confirm the state of affairs and the imbalance of power relations, as well as to limit the extent of responses to the confirmation of the need for violence. Simply stated, to respond to violence with counter-violence almost always confirms existing differential power relations. Then again, most revolutions have violent origins, as underlined by Mao's famous dictum that 'political power grows out of the barrel of a gun'. But, as we bring forward in this context, artistic mediations may constitute a more effective (and decisive) tool for the resolving of conflicts that operate through other means and through other channels, thus truly producing new power relations and alternative ways of political struggle. This mode of exposing conflict and violence through artistic work is an activist act. But more importantly, it is an act of artistic and technological 'mediation'. The agency of the artistic work in terms of conflict is then situated in the ability/capacity to visualise the conflict, creating awareness of its consequences, its side-effects, and its collateral damage. In the process, it becomes a fertile ground for political action and the creation of alternative realities. The effectiveness of artistic production to achieve these results should not be underestimated; after all, aggressive reaction of the oppressors against this kind of activism is a clear indicator of art's potential to challenge established power structures.[6]

Returning to the example of Russia in the years immediately after the fall of the Iron Curtain, it is worth mentioning that Peter Pomerantsev charaterised this period of transition as a move from hardware warfare to software warfare.[7] This reminds us of Jean-Francois Lyotard in more than one way: not only is the era of grand narratives over, but following on Lyotard, it evidences the increasing importance of information (and access to it), and how information has become both a source and a tool of power.[8] Some sense of caution is needed here, though. It was Walter Benjamin who clearly converted the relation between artistic mediation and politics. Benjamin demonstrated in his writings that it was inevitable that the distinction between art and politics became meaningless after the emergence of mass media.[9] For Benjamin there remained only two possibilities after this emergence: either the representation of reality slipped into political propaganda, or it focused on the technological forms themselves by illuminating both their emancipating potential and the political realities that distort their effects:

> the choice is between political manipulation or technical awareness. The latter politicizes not so much through an elaboration of the deficiencies in the present social order as through demonstrating that this order constrains the means that already exist to rectify them.[10]

Mediating is usually understood as a process of coping with the effects and traumas caused by war and conflicts. This approach would expand on the primary definition of mediation, which according to the Merriam-Webster dictionary is to 'intervene between people in a dispute in order to bring about an agreement or reconciliation'.[11] In this issue of *Footprint*, however, we extend this interpretation of the concept of mediation by focusing on two aspects:

(1) mediation as a process of absorbing and internalising conflicts, with the specific aim to not concentrate on the smoothening out of its effects, but instead, to make the effects of conflict tangible and the fertile ground for artistic production/responses. This would not mean the same perverse act that Marinetti was accused of, namely, of bulldozing the delicacy of the suffering of the ones affected by conflict, but on the contrary, to appreciate the way

culture and artistic practices become agents in the dealing with the impact of conflict. This would mean a doubling of the process of internalisation, as it would entail both a psychological and an artistic internalisation (resulting in a productive act); and,

(2) in using the notion of mediation, we also emphasise the role of the medium in the overall overview of artistic practices. This means that we produce reflections that evolve around the medium with which conflicts are assessed and internalised into artistic work, for instance by concentrating on film, public sonic space, photography, architectural research, narratives, etcetera. Thus, mediating stands for making a distinction between different types of media in the process of the artistic internalisation of conflicts, taking into account their technical specificities, methods of representation, the ways they engage with the audience, and so on. We believe this also makes our publication timely in the light of the accelerated (media) digitisation of communication, education, and artistic/architectural creation in the age of (post-)Covid-19.

Lisa Parks defined mediation as a performative enactment in time, a materialisation of particular conditions.[12] For her, mediation involves not only depicting an historical event, but also bringing forward or 'enactment'. Sites of mediation are those where spatiality – that non-substance that seems to intrigue architects – is introduced. The place or ground, as well as the 'non-ground' where mediation takes place, constitute the focus of the articles presented here. Mediated production has historically been positioned as a sequence, starting with photography, then cinema, followed by electronic and digital media. Here, we can also consider space as both a medium and media. It seems clear that nowadays conflict-related studies and theorisations should work towards such a more complex understanding of the relation between architecture and conflict.[13] Many single elaborations about the relation between space and conflict already exist, but most of these are case or context dependent and do not achieve a more general, synthetic conclusion. It is high time to engage in acts of research that unify elaborations of spatial conflicts through concepts and theories that are, indeed, truly interdisciplinary. With this volume we would therefore like to propose the symbiosis of architecture, art, conflict and media studies as the first in a line of many.

Contributions

Within the context of this current global political and scholarly state of affairs sketched thus far, we have thus structured this issue of *Footprint* via a tripartite division, making a distinction between modes of operation, means of divulgence and agencies of protest in relation to the mediating of the spatiality of conflicts. The articles and visual essays in this issue of *Footprint* will follow this outline:

In 'modes of operation', Mark Jarzombek, Eliyahu Keller and Eytan Mann investigate the potentials (and limitations) of the immersive technology of virtual reality (VR) as a pedagogical tool for architecture. Extending beyond the conventional use of VR to add layers of realism to the objects of inquiry, the authors argue that these technologies operate as a medium that transverses different epistemological registers, from the reconstruction and visualisation of architecture proper and its theorisation, to its education. The article discusses the outcomes of a research and design workshop conducted at MIT in 2019, which focused on the Palestinian village of Lifta. Aided by VR technology, the projects dive into the deep historical complexities of the site, resulting in hybrid process-based products that integrate VR installation, theoretical and critical research, mapping and architectural interventions, all of which highlight the pedagogical validity of immersive visualisation technologies. Gökçe Önal discusses remote sensing technologies in service of endless extraction and visualisation/observation of the territory, which is a form of both person-object mediation and media-dependent act. The shift from the camera

to the sensor has rendered mediated exploitation technologies ever more accurate and thus more destructive. The sensor constitutes the mechanical 'eye from above', the new Christ Pantocrator, overseeing the creation of new worlds, based on extraction of resources to feed into the desires of a post-capitalist world. In addition to discussing the theoretical implications, Önal deals with the technical aspects of remote sensing, bringing forward the idea that the sensor is already the scanning of a certain spatial and/or material condition from a distance, but that the mediated role of software puts the end-user at an even more distant end-point of the process. Omar Mismar challenges the perverse aesthetic appeal of the image of violent destruction by inserting names of victims into its script code that gradually transforms the image into an unreadable 'glitch'. This visual essay, consisting of six stills from Mismar's 2015 multimedia art piece 'I will not find this image beautiful, I will not find this image beautiful, I will not find this image beautiful (An unfinished monument)', redefines the very notion of monumentality and memorialisation in the contemporary, media-saturated world.

In 'means of divulgence', Melina Philippou uses critical cartography to test the legal aspects of the Eastern Mediterranean Route (EMR) during the refugee crisis of 2015, the first such instance of statelessness in European territory since World War II. The essay exposes the EMR territory as a transnational space of oppression and control with its own set of contingent rules and principles. By unfolding its institutional geography, hidden infrastructure, and military-like strategies of intimidation, Philippou demonstrates the existence of territoriality of political manipulations that managed to completely negate Europe's humanitarian agenda. The synthetic diagram of the route, as mapped and graphically represented by the author, then serves as an activist tool and a platform for further critical discussions. Then, Noa Roei's argument centralises Amit Yatziv's *Detroit*, a short film dealing with a real fictive Arab village, one of many realised for the Israeli and US military to practice tactics of counter-insurgence. Rather than to understand its military spatial logic, Roei takes everyday life experience in order to investigate how this logic has started to infect, subconsciously or not, our common understandings of space. The mediated form of representation itself, argues Roei, becomes the site where the military geography is situated, thus projecting the difficult relation between the territory and its simulacrum onto the viewers. The process of coding and decoding embedded in the map is transposed to the art work itself, where the space that is designated for destruction is transformed into a simulacrum. In their visual essay, the Center for Land Use Interpretation (CLUI) uses internet-based satellite imagery to literally 'draw/narrow our attention' to the actual impact range targets in military training areas. Though largely two-dimensional when seen from above, shown as a gallery in a visual essay these images create a cosmological atmosphere, like a 'planetary hard mass pulled in by gravity'; they pull our gaze as well, until it becomes difficult to look away.

In 'agencies of protest', Lutz Robbers proposes a reading of the centre of the round-about as the revolutionary place where the spatial configurations become the medium through which political absence is returning (with a vengeance). Referring to Modern sensibilities depicting the roundabout as mobilised spectacle, Robbers argues that the 'always too early and/or always too late' is the potential hidden virtue, or even revolutionary quality of the round-about site. As shown in the 'yellow vests' ('*Gilets jaunes*') protest in France in 2018, questioning the non-designated, non-representational nature constitutes a place that can act as a new medium in social conflict. Ahmad Beydoun's article proposes a mediated reality of a former detention camp as the proper way out of the political and ideological

claim laid upon the camp's current physical reality. The Khiam Detention Centre, formerly used by the Israeli army and still filled with their presence through haunted images and voices, but also through the GPS wave lengths, is currently in the process of being appropriated by Hezbollah as vivid memory to the heroics of the inmates' resistance(s). Both parties thus seem to by-pass the suffering for political ends, a feature a sound-mediated 'generative environment device', consisting of interviews, former radio recordings and sonic mappings, tries to accommodate. Both the memories of the camp and a mediated depiction of the experience of the camp are thus 'guaranteed', or taken care of. In her visual essay 'The Generalštab Building as Image: A History Decomposed', Katarina Andjelković investigates how the mental image of this cultural monument, damaged in the 1999 NATO bombing of the Federal Republic of Yugoslavia, has changed in the past twenty years, transgressing the identity of the historical event. Andjelković offers aesthetic reflections on political bodies and conditions, asking how they have redefined the material reality of the Generalštab building from a cultural artefact into an unsophisticated political performance.

Conclusion

Conflicts, be they geographical, spatial, political or interpersonal, are always already the locus of anxiety and concern because they bespeak uneven power-relations, imminent danger, threat, tension, war, violence, suffering and ultimately the loss of vitality and life. The horizons of conflict seem to inevitably spread out and dramatically diversify in the light of current global developments, much to the despair of many. But, as the articles included in the issue of *Footprint* attest, these horizons need not be dismissed as dysfunctional or entirely unproductive. On the contrary: even if they do alert us of past, ongoing and future spatial conflicts, they do so from a perspective that positions artistic mediation as a powerful form of practice that engages them with a critical attitude, with social awareness and accountability, with a proclivity to spark protest and stimulate activation, actions and activisms. They show how mediating the spatiality of conflicts may proceed through artistic and aesthetic experimentation, be it as pedagogical and research tools, or as a means for theory formation. They engage forms of expression that border on irony, humour, and even cynicism, but they also show us how, in the midst of conflict, other expressions based on beauty, empathy and deep-seated cultural traditions find their outlet, offering hope to embrace the dire complexities of contemporary spatial conflict from affirmative and productive positions.

Notes

1. Chantal Mouffe, *Agonistics: Thinking the World Politically* (London and New York: Verso, 2013).
2. Boris Groys, *History Becomes Form: Moscow Conceptualism* (Cambridge, MA and London: The MIT Press, 2010). Relevant in this context is also his 2015 curated exhibition 'Specters of Communism: Contemporary Russian Art', held in New York.
3. Bruno Latour, 'Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern', *Critical Inquiry* 30 (Winter 2004): 225–248.
4. Erin Hale, '"Be water": Hong Kong Protesters Adopt Bruce Lee Tactic to Evade Police Crackdown', *The Independent*, 6 January 2020.
5. Manfredo Tafuri, *Theories and History of Architecture,* trans. Giorgio Verrecchia (London: Granada, 1980 [1968]).
6. During and after the 'Mediating the Spatiality of Conflicts' conference, some participants used pseudonyms to cover their true identity in fear of prosecution. There have even been reports of authors receiving threats from paramilitary organisations for their activist work.
7. Peter Pomerantsev, *Nothing is True and Everything is Possible: Adventures in Modern Russia* and *This Is Not Propaganda: Adventures in the War Against*

Reality (London: Faber & Faber, 2017 and 2019 respectively).

8. Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge,* trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984 [1979]).
9. Walter Benjamin, 'The Artwork in the Age of Technical Reproduction', trans. Edmund Jephcott and Harry Zohn, in *Walter Benjamin: The Work of Art In the Age of its Technological Reproducibility and Other Writings on Media,* ed. Michael W. Jennings, Brigid Doherty, and Thomas Y. Levin (Cambridge, MA and London: The Belknap Press of Harvard University Press, 2008), 19–55, and Walter Benjamin, *Das Passagen-Werk* (Frankfurt am Main: Suhrkamp Verlag, 1983). See also: Patrick Healy and Andrej Radman, eds., *Footprint* 18, 'Constellation of Awakening: Benjamin and Architecture' (Spring/Summer 2016), https://doi.org/10.7480/footprint.10.1.
10. Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* (Cambridge, MA and London: The MIT Press, 1989), 140–142.
11. https://merriam-webster.com
12. Lisa Parks, *Rethinking Media Coverage: Vertical Mediation and the War on Terror* (New York and London: Routledge, 2018).
13. Examples of such recently published work: Krista Lynes, Tyler Morgenstern, Ian Alan Paul, eds. *Moving Images: Mediating Migration as Crisis* (Bielefeld: transcript Verlag, 2020) and Sabrina Ellebrecht, *Mediated Bordering: Eurosur, the Refugee Boat and the Construction of an External EU Border* (Bielefeld: transcript Verlag, 2019).

Biography

Armina Pilav is feminist, architect, curator, researcher and lecturer at the Department of Landscape Architecture, University of Sheffield. She received the Marie Curie Individual Fellowship for her Un-war Space research (2016–2018) developed at the Faculty of Architecture and Built Environment, TU Delft. Her research, practice and teaching intersects and focuses on politics of re-presentation and re-production of physical, mediated space, bodily and interspecies experiences in extreme conditions of the war destruction. She founded Un-war Space Lab, the collective of architects and intermedia artists researching and exposing, spatially and virtually, ecologies of violent spatial transformations.

Marc Schoonderbeek is an architect and the programme director of Borders & Territories. He currently acts as research nestor for the Department of Architecture at TU Delft. His doctorate, 'Place-Time Discontinuities: Mapping in Architectural Discourse', presented a theory of mapping in architectural discourse by making explicit the relationship between spatial analysis and architectural design. In 1998, he co-founded 12PM-Architecture: Office for Architecture and Urbanism, Design and Research in Amsterdam. He is the series editor of the *Architectural Borders and Territories* book series with Routledge (starting in 2020), and an editor of *Footprint* and the Modi Operandi series. He lectured at numerous architecture institutes, and has contributed to architectural magazines. In 2004, he co-founded 66EAST: Centre for Urban Culture in Amsterdam and has published *Houses in Transformation: Interventions in European Gentrification* (2008; with JaapJan Berg, Tahl Kaminer and Joost Zonneveld); *Border Conditions* (2010) and *X Agendas for Architecture* (2015, with Oscar Rommens and Loed Stolte).

Heidi Sohn is associate professor of Architecture Theory, academic coordinator and interim chair of Architecture Theory at the Faculty of Architecture, TU Delft. She received her PhD in Architecture Theory from TU Delft in 2006. She is co-editor of *Clinical and Critical Cartographies* (with Andrej Radman, EUP, 2017) and author of multiple publications. She is a founding editor of *Footprint* (2007–2012). She was visiting professor of Architectural Theory at DIA in Dessau, Germany, and at Umeå School of Architecture in Sweden. Her main areas of investigation include genealogical inquiries of post-modern and post-human theoretical landscapes, as well as diverse geopolitical and politico-economic expressions of late capitalist urbanisation.

Aleksandar Staničić is an architect and assistant professor at TU Delft Faculty of Architecture and the Built Environment, the Chair of Methods of Analysis and Imagination. Previously he was a Marie Curie Postdoctoral Fellow at TU Delft, research scholar at the Italian Academy for Advanced Studies, Columbia University, and post-doctoral fellow at the Aga Khan Programme for Islamic Architecture at MIT. He is currently working on two book projects, *War Diaries: Design after the Destruction of Art and Architecture* (co-editor, University of Virginia Press, 2021) and *Transition Urbicide: Post-War Reconstruction in Post-Socialist Belgrade* (sole author, forthcoming). He is recipient of grants and fellowships from the Graham Foundation, the European Commission, the Government of Lombardy Region, Italy, and the Ministry of Education, Republic of Serbia.

Site-Archive-Medium: VR, Architectural History, Pedagogy and the Case of Lifta

Eliyahu Keller, Mark Jarzombek and Eytan Mann

As a pedagogical tool, virtual reality (VR) is developing at a rapid pace with researchers from various fields calling for a better understanding of its potential.[1] But in the field of architecture, VR has been largely limited either to the reconstruction of sites that have been lost or are otherwise inaccessible, or to the advancement of high-end research. We can enter a Neolithic tomb; we can walk through Hadrian's villa; we can explore an unbuilt Hindu temple. We can now also work more precisely with the interface between hand and robot; we can see through walls to design better structural details. The use of VR in the context of architecture's broader concerns, however, remains quite limited, the reasons being a lack of technological know-how, the limited reach of the technology in classroom settings, and logistical difficulties. But beyond such real-life difficulties that can surely be improved upon in the future, the general intellectual question of how VR can be used pedagogically remains in its infancy and is, in fact, hampered precisely by the technology's general promise of simple, faithful realism.

In the research presented below, based on a workshop conducted at MIT in 2019, we not only embrace the limitations of what can be understood as real within the VR platform, but also exploit the capacity of VR to create jumps and links to other spaces, times and objects as part of its foundational capacity. The article will first present the workshop and the resulting virtual-reality installations, in order to discuss some of the critical questions that arose from the research and the work: can historical evidence be spatialised within the detailed context of the materiality of site? What does an immersive form of representation entail for the pedagogy of architectural history? And what possibility does this framework offer for conveying the complexity of the site of Lifta for other, similarly complex sites?

Within the theoretical posture adopted for this research project VR was not a tool that provided an additional layer of realism to what is being studied, but rather a medium that allowed us to work between various epistemological registers to create something that is just as much a part of architecture as it is of pedagogy. In other words, we wanted to create something that was not just a personal statement, but that could translate into a teaching tool.

In this, we wanted to build a bridge to developments in the art world, where artists have used historical research, to become, in fact, ever more like historians.[2] The well-known African American artist Renée Green, for example, explains that in her work, she

> wanted to begin by examining an artifact, a text, a painting or a group of paintings, a decorative object, an image, a novel, a poem, a garden, a palace, a house. By beginning with these objects or places, and the contexts in which they appeared, it was possible to detect the intricate working of certain ideologies which

> were being put forth … and to attempt to decipher the contradictory pleasure which might accompany them.[3]

Similarly, the choreographer Netta Yerushalmy and historian Julia Foulkes developed a hybrid-event project called *Paramodernities*: part performance, part academic conference, and part town-hall gathering.

By placing artistic and historical interpretation in dialogue – and tension – with one another we can begin to open new ways of thinking about the past, as well as its representation in the present. Take for instance *Mitologies,* a VR piece created by Lebanese filmmaker Hisham Bizri in 1997. As Bizri describes it, the work is 'loosely based on the Cretan myth of the Minotaur, the Revelation of St. John, Dante's *Inferno*, and Dürer's woodcuts of the Apocalypse. Music from Richard Wagner's *Der Ring des Nibelungen* serves as a structural motif for the unfolding narrative'. This amalgam of texts, images, objects and sounds is then brought together in an architectural model which

> fuses the exterior of a 3D church modeled after a Leonardo da Vinci sketch of a church that was never built with the interior of the Great Mosque of Cordoba. Beneath the church is a maze built as a "rhizome": every path is connected to every other one, with no center and no periphery. As viewers proceed through the maze, they find themselves on paths that lead to medieval curiosity rooms, to rooms populated by statues of Donatello, the iconography of Cesare Ripa, and so forth.[4]

Here, the historian-as-artist and the artist-as-historian are concerned with particular historical subjects as much as with the mediums and forms through which these histories are represented and conveyed. Rather than separating fiction from documentary modes of representation, works of fiction can be considered as historical documents in their own right; ones that are, in fact, as potentially valid as a starting point for reflecting on present conditions as documentary evidence, archival materials and other more 'conventional' documents may be.[5] The point is not to do a better history but to unpack history in contexts that defy linear reasoning and in ways that allow for interpretation and discussion. We thus purposefully picked a particularly complicated site, Lifta, a Palestinian village located on the slopes of the western entrance to Jerusalem, evacuated and depopulated by Israeli forces in 1948.

Lifta and beyond

The work presented here is the result of a collaboration between the MIT Department of Architecture and the Department of Bible Archaeology and Ancient Near East Studies at Ben-Gurion University (BGU). Students from MIT in collaboration with archaeologists from Ben-Gurion participated in the study of the evacuated village, and investigated through various methods the archaeological and architectural remains, as well as the various archives, narratives and stories told about the site. Following a series of preparatory lectures, ranging in topics from history, methodology, and technique, we embarked on a two-week long visit to Lifta and Jerusalem. At the site, we used advanced simulation techniques, 3D scanning, and real-time rendering, as well as an array of archival, historical and scholarly resources.

In pursuing this we were in general alignment with the artist Cliff McLucas and his notion of 'deep maps'. In McLucas's point of view deep maps will:

> be sumptuous; … will embrace a range of different media or registers in a sophisticated and multilayered orchestration, … will be achieved by the articulation of a variety of media … will bring together the amateur and the professional, the artist and the scientist, the official and the unofficial, the national and the local … will not seek the authority and objectivity of conventional cartography. They will be politicized, passionate, and partisan.[6]

However, with such an extensive check-list, making such a map can be a tall order. The expectation horizons envisioned by McLucas are, in fact, so intimidating that none but the most hearty will be in a position to fulfil them. Once again, this only emphasises the need for the broad situationalising space of pedagogy, as opposed to the space of art-world theorising.

One cannot achieve the results McLucas wants without extensive and continuous discussions, without input, without reading, learning and writing and without critiques. One also needs time: the time it takes to digest material, to travel, to think and create. The quality of the results depends on the competencies of the educators and students, on the material that can be placed at their disposal and even on the funding that is available. These things are rarely folded into the theoretical discussion or treated as background to the final project.

Instead of focusing on the end goal, we concentrated on the process, conceiving the workshop as an exercise in design research.[7] In that sense, we were using pedagogical methods that students were familiar with from design studios and seminars. These included daily reviews of the work and progress both during the visit to Lifta and in the workshop's final week, as well as public reviews with guests and critics from the collaborating institutions and beyond. The workshop, supported by special funding from MIT for student research and travel, also featured a cross-disciplinary range of teaching staff who had never previously worked together. While staff from MIT served both as instructors and, to a degree, curators of the work, the role of BGU staff within this framework was to introduce the MIT students to archaeological methodologies including site analysis, survey and approach. Those were delivered in the form of frontal and on-site lectures. The students, who all came from a variety of geographic and disciplinary backgrounds, were asked to form small groups and to have conversations among themselves and in the process they developed the themes and topics that they wished to explore. All but one student have not visited Israel or Palestine prior to this workshop, and thus approached the set of issues at hand from a relatively uninitiated position. The final two weeks were spent back at MIT, where the students developed their projects for submission. There was a final presentation with a public review of the projects at the Keller Gallery in the MIT Department of Architecture. It is hoped that after the experience in the VR set there will be a discussion about what was experienced, and in that way the pedagogical track moves out of the space of the VR and into the classroom or beyond.

This might seem as just part and parcel of education, but for us these issues were designed to gravitate around the dialectic of incompleteness: the necessary incompleteness of the project's ambition and the structured incompleteness of our expectation horizon. We embraced the foggy, ontological nature of making a narrative so as to go against the tendency to assume that the maker of the narrative map is a type of scientist or perhaps amateur scientist. The narratives the students developed were all made within the framework of a range of gives-and-takes with their own situational realities – most of which can themselves be only vaguely mapped.[8] However, we made it clear that the final project was not just a narrative that mapped only backward onto their personal interests and experience, but had to have the potential to serve as a pedagogical tool for others. We hoped that the projects would reflect not how to learn, but how they learned. In that sense, pedagogy was not some backdrop to the final project, but a palpable force that circulated through these projects.

As a first step, a digital model of the entire site was produced by photographic documentation from above, using a drone.[9] [Fig. 1–3] This model served not just as a 'site' for the interpretations

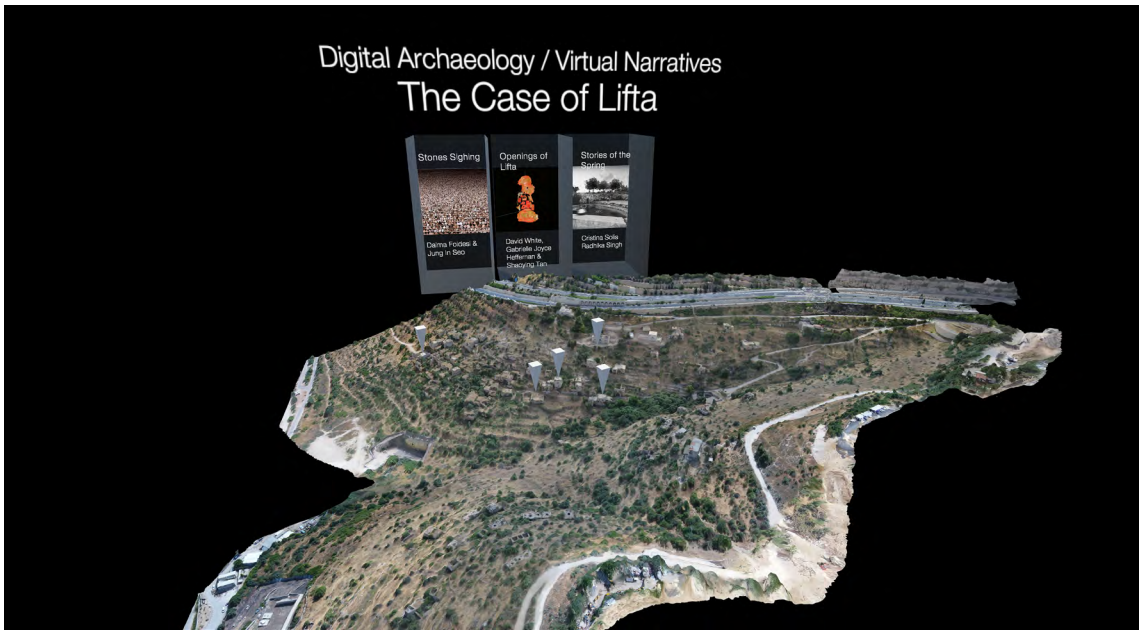


Fig. 1

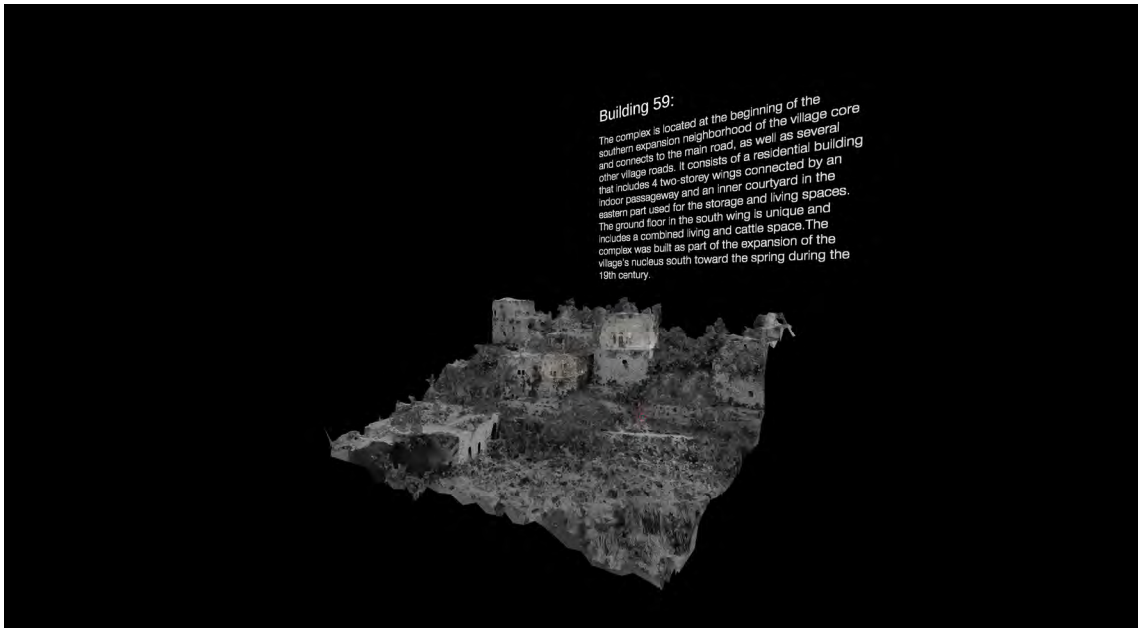


Fig. 2

Fig. 1: General VR View of the entire Lifta site, with the entrance portals to the student projects.

Fig. 2: VR exterior view of a building complex house in Lifta, along with text adapted from the IAA (Israel Antiquities Authority) archeological survey.

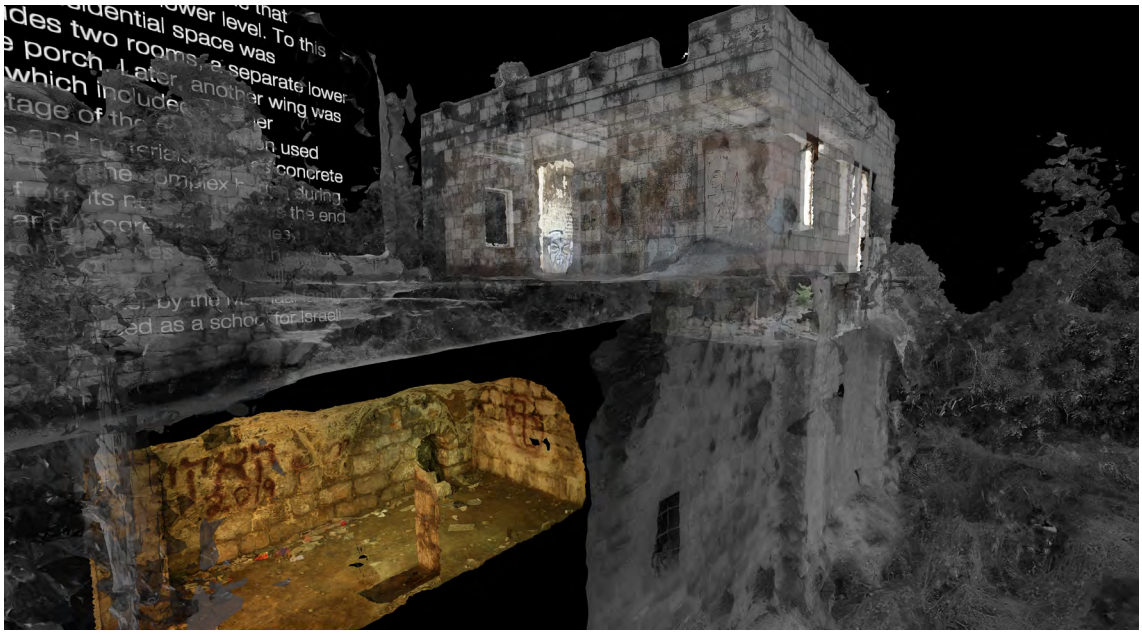


Fig. 3

Fig. 4

Fig. 3: VR sectional view of the Muchtar's (village mayor) house and its different levels.

Fig. 4: Interior VR view of the Bader family house in Lifta, with photos of the Palestinian evacuation. Students: Radhika Singh, Cristina Solis.

by the student teams, but also as a type of portal for the student projects. In each project, the site, its various interlocutors, its archival resources, are all composed in the service of the narratives constructed by the students, through which Lifta's complex histories can be seen anew. The efforts, which were exhibited publicly, provide epistemological and experiential cross-sections through the problematics of the site in the manner of a critical historiography.[10]

Critical historiography accepts that history is written not just by historians, but by a wide range of actors. It also accepts the importance of the subject position of the researcher. Defining one's own subject position is, however, a slippery task, but to ignore it altogether is to assume that position of a normative universal.[11] By the same token, to reduce everything to subject position is to remove oneself from the realities of difference and otherness. Critical historiography is a space of operating between the pulls of objectivity and subjectivity. Within the theoretical context and intersection of conflict histories and their mediation – specifically in sites wrought by supposed objectivity of narratives such as Lifta – the framework offered by critical historiography opens up a unique space for both historical and pedagogical investigations. It is not a method as such.[12]

Lifta is one of the only remaining Palestinian villages that were neither completely demolished or resettled by a Jewish-Israeli population following the Israel-Arab war of 1948.[13] Nestled between the highways and cliffs leading to modern-day Jerusalem from the west, Lifta is a wounded landscape, where the marks left by soldiers and state violence, as well as the wear of time, the force of nature and the stains of neglect are all visible. The village has also been surveyed and excavated repeatedly from the beginnings of the archaeological study of Palestine and the Land of Israel at the end of the nineteenth century up to the most recent survey conducted by the Israel Antiquities Authority in 2017.[14] Its material remains, its history under different governments and empires, its present place within the Israeli-Palestinian conflict, and its uncertain future, all demonstrate the multiplicities of history's writing and construction. Indeed, Lifta is a unique and paradigmatic locus of conflicted histories, archaeology and landscape; of traumatic memories, contested presents, and potential futures.

Within the dominant Israeli and Jewish narrative, the village's biblical history points to the roots of Jewish habitation of the Land of Israel, marking the border between the lands of Judea and Benjamin as described in the Book of Joshua, and confirmed, supposedly, by various ancient maps; a vernacular fiction that has been used and abused by statesmen in the creation of national claims.[15] In Palestinian history, Lifta was one of the largest and most flourishing towns within British Mandatory Palestine. Today, it is a ruin, waiting for the return of its original occupants, and a battleground for activists from both sides of the political and national map. In between and beyond these narratives, the history of the village dates back to the thirteenth century BCE, and is speckled with unique stories, spaces and events.[16] Presently, the village is the only remnant to survive in such a remarkable condition in Israel and in neighbouring countries. It remains as a living testimony to the landscape that has been common in the land of Israel and Palestine for thousands of years of history.

Taken all together, the site is defined by temporal scales of deep time, modern history and urban processes, as well as by the borders of the map. As the investigation began, students were, therefore, faced with multiple decisions in demarcating and limiting their site of inquiry, and relatedly, by the scale and reach of the archive at hand. A study of any architectural site requires such limits to be set: Is the study limited to a particular period? Are only built spaces to be included or is the landscape,

whether cultivated or not, within those limits? And what of the roads leading elsewhere? What are the trade routes, the streams, the terraces which condition the site's economy and activity? Or perhaps the limits should be set in accordance with municipal and legal definitions, themselves malleable and changing through history, their traces found in maps, construction documents, property bills and plans? And lastly, what are the disciplinary boundaries when dealing with the history of destruction and state violence such as appears at Lifta? Can architectural history offer new perspectives on Lifta's destruction?[17]

In the process of designing a possible platform and interface for Lifta, the projects – as test cases – aim to further the potential of immersive technologies as a pedagogical tool, and to open the critical questions that arose from the research and the work: can historical evidence be spatialised within the detailed context of the materiality of site? What does an immersive form of representation entail for the pedagogy of architectural history? And what possibility does this framework offer for conveying the complexity of Lifta, in relation to other, similarly complex sites?

The archive

An enormous archive of documents, representations, surveys, testimonies and stories was collected to bring out the tension between narrative, representation, evidence and myth. These included a history of habitation, occupation, ownership, planning, design and surveying; an ever growing body of visual representations, images, drawings and works of art; a history of materials and waste, their decomposition, their layering, accumulation and continuous effects on the reality of the site; and a history of narration, activism and resistance by organisations such as the Save Lifta coalition, or our main guide throughout our fieldwork, the Palestinian refugee and former resident of Lifta, Ya'akub Uda.

As important as these all are, when we asked the students to use the digital mapping as a way to explore the archives we stressed that there are many types of archives. Some, obviously, already exist and can be mined, like those just mentioned. Some, on the other hand, exist only abstractly, like newspaper articles or sets of postcards. They still need to be curated in order to tell a story. Some archives have not yet been created, but can be both created and curated in the same activity, like interviews or on-site documentation. And finally, there are some archives that can be works of art or fiction and that move between disciplinary realms.

In addressing this, the student-teams developed three themes that represented an intersection of the various materials, objects, narratives and historical studies to which they were exposed. The themes – Water, Stone, and Openings – are relevant to the site, but are also rooted in architectural and cultural histories that transcend the limits of Lifta, Palestine or Israel. Its water is more than just the local spring, but a deeply metaphysical proposition; its stones are imprinted, both literally and figuratively, with centuries of rituals and violence; and its openings are testimonies both to specific traditions of architecture and craftsmanship, and to state violence and neglect.

For some of the students, the archive that was brought to bear in the visualisation consisting of personal interviews conducted on site; for others it consisted of photographs, both old and recent; for others, these were the sounds recorded; and for others it consisted of more traditional archival documents and newspaper articles. In each case, students used multiple archives, sewing and stitching them together, as one would a fabric to develop a narrative that aimed to open epistemological questions. In this way the students learned that the site condenses certain possibilities of where to look for existing archives, while opening up possibilities of understanding and creating new ones.

Fig. 5

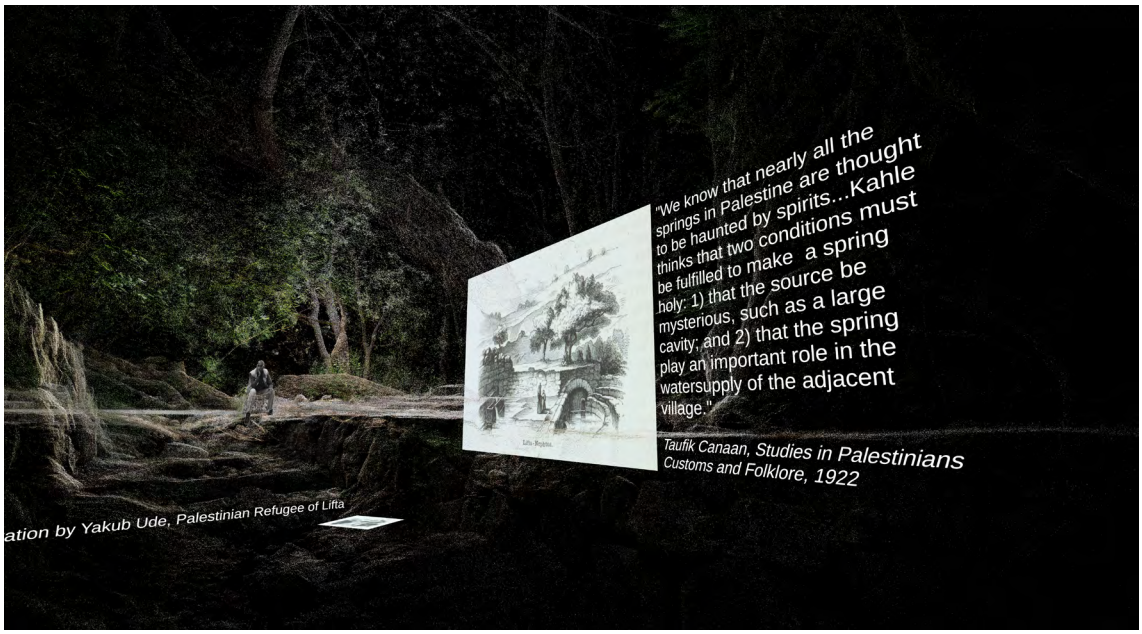


Fig. 6

Fig. 5: View of the Lifta Spring, composed with images of Orthodox Jews collected from news items, and referencing the art of Palestinian artist Raida Adon. Students: Radhika Singh, Cristina Solis.

Fig. 6: Point cloud VR view of the 'Paradise' area in the Lifta spring, composed with 19th century engraving of the spring, text by Tawfiq Cana'an and narration by Ya'akub Uda. Students: Radhika Singh, Cristina Solis.

Fig. 7

Fig. 8

Fig. 7: VR view of the entrance space to the 'Stones Sighing' project depicting the Mamilla shopping center in Jerusalem designed by Moshe Safdie. Students: Dalma Földesi, Jung In Seo.

Fig. 8: Interior VR view of an early cave dwelling in Lifta, composed with drawings of ancient tomb drawings, found in the Israel Antiquity Archive. Students: Dalma Földesi, Jung In Seo.

The resultant epistemological message at the core of each of the three projects was curated using software which facilitated visual material that can be manipulated and interacted with in real time by a future viewer.[18] The scanned models of the site were implanted into VR, to be experienced in a room-scale scenario through a head-mounted display, thus allowing the viewer to inhabit the site in changing scales, to encounter a textual document, to move through a drawing, or to hear sounds emerging from a particular location designated in space.

While VR adheres to the limits of traditional historical studies, it also presents opportunities directly related to its representational capacities and experience that both stretch the boundaries of such inquiries, and expose them. The complexity of Lifta's recent and more distant histories, as well as its current material and political conditions, present precisely such a unique opportunity for experimentation and exposure. Rather than adhering to VR's hyped ability to transport one into realistic environments and creating a sense of 'being there', we consider VR for architectural history pedagogy as a move away from supposed objectivity, and as a challenge to the very notion of the real, which allows modes of interpretive surveying that are in flux. With a VR headset, one steps into these assembled landscapes and is able to inhabit the space, interact with objects within that space, and form new agency.

One of the projects developed by the students, for example, focuses on the history of public rituals and present conflicts around Lifta's spring. [Fig. 4–6] Titled 'Stories of the Spring', it begins when one is placed inside a depopulated ruin of a house overlooking the village's water source. From there, the spectator is able to roam around in the evacuated interior in its current dilapidated state. On the crumbling floor of the Palestinian home, the students placed old family photographs of Palestinian refugees found in online archives, as if those were left behind while in a rush. Gazing on the photographs, the VR spectator triggers a text written by the early twentieth-century Palestinian ethnographer Tawfiq Canaan, describing the interior of Palestinian homes.[19] Simultaneously, a voice narrates the space: a testimony of the Palestinian refugee and native of Lifta recorded by the students while at the site, who shares the story of the family who owned the house. As the visitor approaches the house's window, a view of the spring itself is exposed, assuming the point of view of the house's original inhabitants.

The project goes further to present not only the spring's presence in history and past conflicts, but its contested present as well. The user finds herself standing by the spring's waters, witnessing next to the fresh water the accumulation of refuse. Within the scene, the visitor encounters a *tallit*: a piece of garment traditionally used by religious Jewish men, which, when focused on, activates the archive of which the scene is composed. Using cut-out figures from journalistic photographs, an array of news items, and sounds of children playing in the water recorded during our fieldwork, the VR exposes the visitor to daily conflicts occurring in Lifta between religious Jewish men who claim the space around the spring and use it as a purifying *mikveh*, while preventing, at times aggressively, women of any ethnicity or religion to access the site.[20] To this the students added yet another artistic and archival reference: an visual excerpt from the work of Palestinian artist Raida Adon, who had placed empty dresses around the spring, representing Lifta's houses, now emptied of the bodies that used to inhabit them and which have been violently removed.[21]

Site archive

Moving between the real, the imagined and the constructed means that we were not seeking some essential aspect of the site, nor were we trying to articulate some artistic or poetic take on it, but rather allow for multiple visions and voices. To do

this required shifting from an epistemological to an ontological and operational perspective on the issue of the reciprocity of site and archive, objects and their narration. The viewer is expected to accept the doubling of history as both past events and present narratives, and not get caught up in dichotomous thinking (for example past as real versus past as constructed).[22] The immersive quality facilitates a reciprocity between the site as it is recorded, represented and narrated, as well as the numerous existing and constructed archives, or the various testimonies about the site. As these intermingle with one another through the work and the investigation, the site itself becomes yet another archive, while the archive transforms, or better yet, it is exposed, as what it always has been: a site of intervention and design.

Such archival interventions would require an engagement both with the archive and its absence. In a recent article Anne Gilliland and Michelle Caswell coined the concept of an 'impossible archival imaginary' as a way to undertake what the messy business of contesting, renegotiating, and redefining collective memory of the past to 'to take absences – and their attending affects – into account, and in situations where our ethics and humanity demand it, striving to turn impossible archival imaginaries into possibilities'. This means, they argue, that we should complicate 'the link between record and event in order to accommodate records collectively conjured by affect rather than created by event'.[23] And we would agree. Our work in Lifta aims to take a step further, to link absent records, events, and the site itself in the collective project of making an archive possible, while acknowledging that ontological absence.

The intermingling of site and archive is also evident in the project 'Stones Sighing', whose narrative focuses on the main building material, 'Jerusalem' limestone, from which the buildings were constructed. [Fig. 7–9] Giving voice, presence and representation to the history of the limestone, this project pulls strings from various sources in order to create a new space and expose the composition and decomposition of the site. The archives and histories brought into this space are multiple: a detailed scanning of various domestic spaces within Lifta, from early caves to dwellings almost completely collapsed under the weight of time; an archive of drawings and diagrams depicting the traditional construction methods of Palestinian masons, and their appropriation by Israeli architects; historical texts, both primary and secondary, discussing the role, meaning and history of stone masonry; and lastly, an autobiographic poem, 'Standing before the Ruins of El-Birwha', written by the Palestinian national poet Mahmoud Darwish, which is used to structure the entire experience.[24]

Using these materials, the work weaves three narratives. The first is carried by the poem, inflecting the scene with the voice of Palestinian memory, and the story of the forced evacuation of 1948. The second focuses on the stones themselves. Here, every scene takes place in a space that represents a different moment in the life cycle of Lifta's stones, thus animating the supposedly silent material through its historical procession. It begins with an excavated cave, continues to one of Lifta's older houses, moves onto a late-Ottoman era residence, then a renovated house still occupied by an Israeli resident, and ends in a collapsed and punctured ruin. The third narrative revolves around the ideological, daily and symbolic role of stone. Focusing on the tradition of Palestinian masonry, the narrative exposes the manner in which traditional Palestinian methods and labour became an instrument in the service of Israeli ideology and architectural design. Adopting the vernacular traditions associated with masonry, modern Israeli architects often employed the stones of Lifta (and of other villages) in the cultivation of a biblical imaginary in the design of contemporary, quasi-vernacular architectural works.[25] To emphasise this, the narrative begins and

Fig. 9

Fig. 10

Fig. 9: Interior VR view of early residence in Lifta, composed with nearly identical drawings of stone vaults produced by the Palestinian ethnographer Tawfiq Cana'an (left) and the Israeli architect David Kroyanker (right) almost a century later. Students: Dalma Földesi, Jung In Seo.

Fig. 10: General VR view of the 'Openings' project, with local background as backdrop. Students: Gabrielle Heffernan, Shaoying Tan, David White.

Fig. 11

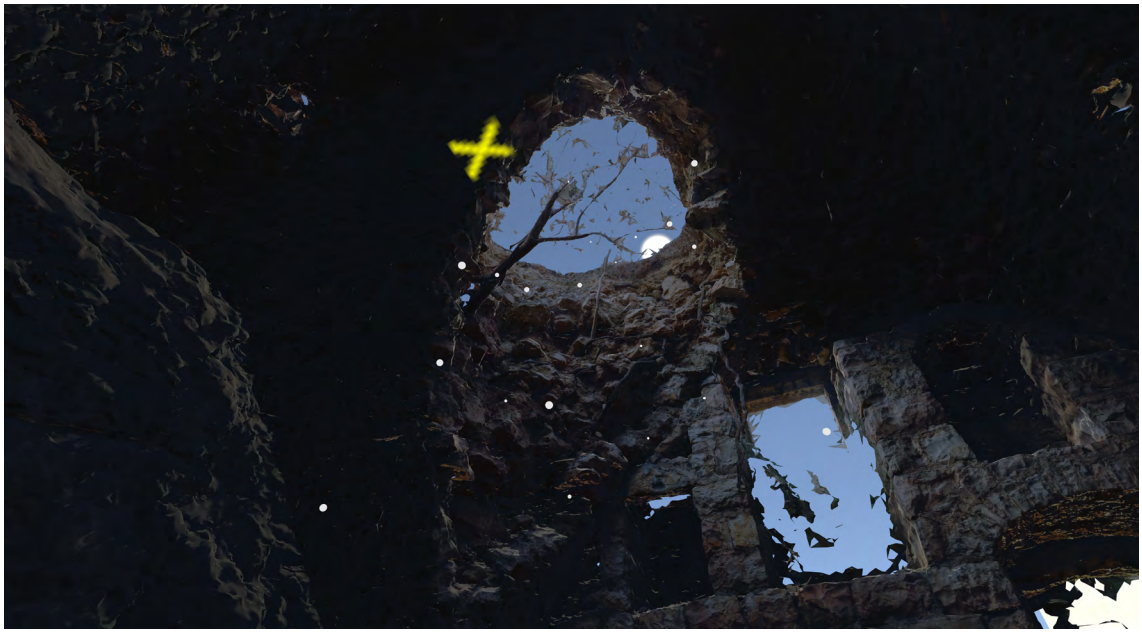


Fig. 12

Fig. 11: VR view of the entrance space in the ‘Openings’ project, showing various types of openings scanned in Lifta. Students: Gabrielle Heffernan, Shaoying Tan, David White.

Fig. 12: Interior VR view of the dilapidated house in Lifta, the roof opening of which was created by explosives placed by Israeli forces. Students: Gabrielle Heffernan, Shaoying Tan, David White.

ends in a space that is several kilometres removed from Lifta: the Mamilla shopping centre by the old city of Jerusalem, a contemporary architectural project inspired by the stone masonry embedded in Lifta's stones.

The third project is titled 'Openings', and examines Lifta's history through the wide array of the apertures on the site, some of which are natural, some designed, some created by violence and war. [Fig. 10–12] The VR experience begins with a somewhat abstracted space, which, not unlike early modern cabinets of curiosities, collects 'objects which appeared to transgress the boundaries between nature and artifice'.[26] Here the project offers a kind of aperture museum in which various scanned openings are arranged. While some apertures offer entrance to the original spaces in Lifta from which they were extracted by 3D scanning, others lead to archival texts and images related both to Lifta and to notions of photography and vision. Also, some of the openings connect beyond the limits of Lifta and provide the audience to look through them to related geographic locations, such as other Palestinian villages and cities, or sites of conflict and ruination throughout the world.[27]

Together, these works demonstrate several of the capacities that VR holds as a technological platform for critical historiography and critical thinking. Wearing the VR head-mounted display and moving around a gallery space, the viewer is required to take action: to move within representations, image, texts and sound, as part of an unfolding event taking place in accordance with one's action and the feedback of the machine. The participant is not a passive observer of the archive, but an archive maker, collecting and connecting materials from various sources. This invites a sort of theatricality in which the observer becomes an actor of sorts, not unlike an archaeologist who is recreating a story from the materials found.

Indeed, and similarly to the VR designer, the archaeologist's imagination constitutes a kind of dramaturgy, in that it resembles that of a writer, a choreographer, or a director who organises the motives, behaviours and actions of anonymous, fictional individuals within bounded analytic spaces in meaningful ways.[28] As soon as archaeologists begin to replicate, reconstruct, represent and restage the past, they invariably employ the scenographic devices and dramatic techniques of theatrical practice. VR, with its immersive and interactive constellation, brings the choreography of archaeology to the observer, far away from the site. Furthermore, these technological affordances enable one to generate multiple, forking site archives, in which the viewer becomes the narrator of the history constructed – another voice to be accounted for – as she generates narratives in real time in a sort of performative unfolding of archives, images and historical materials in space.[29]

Such an intimate bond between an archiving gesture and a transformative gesture puts a lot of stress on the thematics and its qualities. For that reason, this work cannot be limited to the historical investigation per se but exists most fully as a result of site visits, discussions and interviews along with access to the site's complex presence in all sorts of media. Thus, design research is fundamental to historical research and vice versa. Work can only be experimental by both actively positioning itself relative to existing archives and through new archiving moves. Lifta, a unique, particular and significant case, is also representative of numerous other places, histories, archives and narrations, demanding a contemporary and complex way of engagement and pedagogy. By utilising the capacity of VR space into the design of historical research, history itself can be told, created, learned and experienced in new, critical ways.

Notes

1. See for instance: Ali Geris and Nesrin Özdener, 'Design Models for Developing Educational Virtual Reality Environments: A Systematic Review', in *Virtual and Augmented Reality in Education, Art, and Museums,* ed. Giuliana Guazzaroni and Anitha S. Pillai (Berlin: Springer International Publishing, 2017), 1–22; Tassos A. Mikropoulos and Antonis Natsis, 'Educational Virtual Environments: A Ten-Year Review of Empirical Research (1999–2009)', *Computers & Education* 56, no. 3 (April 2011): 769–80; Ivan Stojšić, Andjelija Ivkov-Džigurski, and Olja Maričić, 'Virtual Reality as a Learning Tool: How and Where to Start with Immersive Teaching', in *Didactics of Smart Pedagogy: Smart Pedagogy for Technology Enhanced Learning*, ed. Linda Daniela (Berlin: Springer International Publishing, 2019), 353–69; Jin Rong Yang and Fabian Hadipriono Tan, 'Classroom Education Using Animation and Virtual Reality of the Great Wall of China in Jinshanling: Human Subject Testing', in *Didactics of Smart Pedagogy*, 415–31.
2. Mark Godfrey shows a trend of an increasing number of artists whose practice starts with research in archives, and others who deploy what has been termed an archival form of research (with one object of inquiry leading to another). These varied research processes lead to works that invite viewers to think about the past; to make connections between events, characters, and objects; to join together in memory; and to reconsider the ways in which the past is represented in the wider culture. These tendencies are as prevalent in object-based work such as that of Carol Bove, Tom Burr, Mark Dion, Sam Durant, Renée Green, Thomas Hirschhorn, Ian Kiaer, Simon Starling, and Fred Wilson. Mark Godfrey, 'The artist as historian', *October* 120 (Spring, 2007): 140–72.
3. Renée Green, 'Introduction', *Negotiations in the Contact Zone*, ed. Renée Green (Lisbon: Assírio & Alvim, 2003).
4. Hisham Bizri, 'Story Telling in Virtual Reality', *Leonardo* 33, no. 1 (February 2000): 17–19.
5. It is worth noting however that any documentary 'evidence' entails an aspect of fiction or narrative. As Bill Nichols notes in his discussion of documentary cinema, while all documentaries aim to tell a 'true' story or depict a certain truth, they are still subjective artefacts, retelling history from a specific point of view. Though assuming an objective position, they are still personal perspectives. While 'fiction may be content to suspend disbelief (to accept the world as plausible) … non-fiction often wants to install belief (to accept the world as actual)'. Bill Nichols, *Introduction to Documentary* (Bloomington: Indiana University Press, 2001), 2.
6. Cliff McLucas quoted in Trevor Harris, 'Deep Geography – Deep Mapping: Spatial Storytelling and a Sense of Place', in *Deep Maps and Spatial Narratives*, ed. David J. Bodenhamer, Corrigan, John Corrigan and Trevor Harris (Bloomington: University of Indiana Press, 2015), 39.
7. The workshop took place during the 2019 summer and autumn terms. It was funded by the MIT International Science & Technology Initiative (MISTI), which fosters collaboration between international institutions and MIT. Specifically, this was the first collaboration of its kind between the Architecture Department and the Department of Bible Archaeology and Ancient Near East Studies, and was supported by a fund designated for collaboration between BGU and MIT. At the end of a selection process eight graduate students from the MIT School of Architecture and Planning were chosen (five from the Master of Architecture programme, one from Design-Computation, one from Art, Culture and Technology, and one from City Planning). The MIT students were joined in Israel by staff and students from BGU led by staff members Yuval Yekutieli and Eli Cohen. As a whole the workshop was conceived as an intensive four-week programme, which included a week of preparatory lectures, drone training, and software tutorials (Metashape, Unity, Reality Capture) prior to the visit to Lifta; a two-week long visit to Jerusalem, which included tours and lectures from BGU associates and others, daily fieldwork, and design reviews, including a public mid-review of the

materials collected and project concepts; and a week-long intensive development of the projects themselves which took place at MIT in the VirtualXDesign Lab. Future collaborations between the departments and institutions are currently being considered, employing similar methodologies to other sites in both Israel and the United States.

8. For example, David J. Bodenhamer argues: 'How we construct these narratives will depend, in part, on the richness of our evidence and the tools at our command, but deep mapping can be an ideal storyboard for humanists. It goes beyond traditional uses of GIS and seeks to capture the essence of place and a humanistic sense of distance, direction, and identity'. Be that as it may, we would argue that narratives are only valuable if they expose the multiple potential 'essences' of a place and in that way do not try to foreclose either the past or the future. David J. Bodenhamer, 'Narrating Space and Place', in *Deep Maps,* 23. Though we also generally agree with the following sentiment by Trevor Harris: 'A deep map then is more than a topographical product in that it interweaves physical geography and scientific analysis with biography, folklore, narrative, text, memories, emotions, stories, oral histories, and so much more to contribute to a richer, deeper mapping of space and place' (*Deep Maps,* 39), we, would argue that there can only be deep maps (i.e. in plural), and secondly 'deep' can never be ascertained as a place to which one has ever arrived through any type of general prescription even with many deep maps. The qualifier 'deep' should never promise an objectivity that is impossible to prove. After all, who is the judge of depth? The three narrative maps that the students made are only the fragmented beginnings of a depth that can never be achieved in this traumatised landscape, and yet, there can be no doubt that the whole experience was 'deep' for the students. See: Harris, 'Deep Geography – Deep Mapping'.
9. Deployment of drones for the purposes of cultural heritage and archaeological surveying has become prevalent in recent years, as drones became more affordable. See Dominique Meyer, Elioth Fraijo, Eric Lo, Dominique Rissolo, and Falko Kuester, 'Optimizing UAV Systems for Rapid Survey and Reconstruction of Large Scale Cultural Heritage Sites', in *2015 Digital Heritage* 1 (IEEE, 2015): 151– 54. In the field of digital heritage the discussion on the use of drones has remained fairly technical, focusing on efficiency and urgency of the use of drones for surveying, modelling, and managing heritage sites for preservation purposes, failing to give a critical account of the use of drones as instruments of state power. Such a stance is expressed by Lisa Parks and Caren Kaplan who trace the inherent militaristic instrumentality of drones. According to Caplan and Parks, disregarding the power inscribed in drone perspective might implicate one in continuing a colonising gaze, especially in conflict zones such as Lifta. Lisa Parks and Caren Kaplan, *Life in the Age of Drone Warfare* (Durham: Duke University Press, 2017). The work in Lifta, however, used drones with the purpose of allowing self-generated 3-D models, instead of using available city and state-made maps. This selected strategy aimed at repurposing drone imagery as part of critical design projects.
10. Given the nature of VR, the exhibition could accommodate one visitor at a time, and over its duration had over a hundred visitors from both MIT and beyond.
11. Dominick LaCapra suggests the term 'secondary witnessing' to shed light on the intrinsic problem of the historian's positionality when witnessing destruction and violence: 'Experience involves affect both in the observed and in the observer'. For the observer 'the problem of experience should lead to the question of the role of empathy in historical understanding'. Empathy, LaCapra argues, becomes a kind of surrogate or virtual experience, centred not on identifying with or substituting for the experiences of others but rather on attending carefully to 'the possibly split-off, affective dimension' of those experiences. Dominick LaCapra, *Writing History, Writing Trauma* (Baltimore: Johns Hopkins University Press, 2001), 41.
12. Mark Jarzombek, 'A Prolegomena to Critical

Historiography', *Journal of Architectural Education* 52, no. 4 (May 1999): 197–206.

13. For a comprehensive study of the evacuation of Palestinian villages in 1948 and after, see Walid Khalidi, ed., *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948* (Washington: Institute for Palestine Studies, 2006).
14. Israel Antiquities Authority, Conservation Administration, *Lifta Survey (2014–2017)* http://iaa-conservation.org.il
15. In a recent study, architectural historian Alona Nitzan-Shiftan makes note of the use of Palestinian masonry motifs, methods and styles by Israeli architects and planners in post-1967 Jerusalem. According to Shiftan, the annexation and unification of the city after the Six-Day War was followed by a shift in the practice of architecture and planning and was meant to evoke an image of a biblical and vernacular – rather than modern – image of Jerusalem, and to lend historical, ideological and even religious legitimacy to the existence of the state. Alona Nitzan-Shiftan, *Seizing Jerusalem: The Architecture of Unilateral Unification* (Minneapolis: Minnesota University Press, 2017).
16. Though not a consensus among archaeologists, a prevalent assumption is that the name 'Mei Nephtoah' was derived from the name of the thirteenth-century Pharaoh Merneptah. As the argument goes, 'the "Wells of Merneptah which are in the hills" is the group of springs at Lifta, near Jerusalem, and were so named by Merneptah after his victory over the Israelites, whom he compelled to evacuate Jerusalem itself'. Frank J. Yurco, 'Merneptah's Canaanite Campaign', *Journal of the American Research Center in Egypt* 23 (1986): 213.
17. We, of course, believe that under certain terms it can. In recent years, architectural historians have pointed to the disciplinary issues that such engagement entails. For instance, architectural historian Andrew Herscher foregrounds the representational problem of architectural history when dealing with destruction: 'When architecture is destroyed, however, it is typically regarded as just such a product, effect, expression, or mediation. Destruction usually displaces architecture from architectural discourse, if not the domain of "culture" more generally, and positions it in the domain of "violence", and so, in typical formulations, in radically different disciplinary sites and epistemological frameworks'. Andrew Herscher, *Violence Taking Place: The Architecture of the Kosovo Conflict* (Stanford: Stanford University Press, 2010), 4.
18. The software development environment was done using tools for game design and development, mainly the game-engine Unity. The video-game industry has pushed forward a new medium for real-time, interactive representation, which can be imported to architecture, history and pedagogy.
19. Various writings by Tawfiq Canaan were used in the context of the work: his text about the tradition of Palestinian masonry, and the history of mythical beliefs in relation to water sources and springs in Palestine. Tawfiq Canaan, *The Palestinian Arab House: Its Architecture and Folklore* (Jerusalem: Syrian Orphanage Press, 1933); *Haunted Springs and Water Demons in Palestine* (Jerusalem: Palestine Oriental Society, 1922).
20. For instance: Nir Hasson, 'Men and Women, Religious or Not, Battle for Rights at Israeli Springs', Haaretz, 29 June 2018, https://haaretz.com.
21. Laura van Rij, *Interview with Raida Adon* on the *Zochrot* website, 24 July 2013, https://zochrot.org.
22. Gavin Lucas, *Understanding the Archaeological Record* (New York: Cambridge University Press, 2012).
23. It is worth noting that neither Gilliland nor Caswell are historians. Gilliland is a scholar in the field of information studies, and Caswell in archival studies. Thus, the perspective offered in their work is a disciplinary one, but not that of the archival tourist, be it the historian, artist, or designer, but somewhat of an archival curator or even a gatekeeper, so to speak. Anne J. Gilliland and Michelle Caswell, 'Records and Their Imaginaries: Imagining the Impossible, Making Possible the Imagined', *Archival Science* 16 (March 2016): 75.

24. The English translation used by the students is by Senan Anton, and appears in the posthumous collection of the poet. See: Mahmoud Darwish, *I Don't Want This Poem to End: Early and Late Poems* (Northampton: Interlink Publishing Group, 2017).
25. Nitzan-Shiftan, *Seizing Jerusalem*.
26. Stephanie Bowry, 'Before Museums: The Curiosity Cabinet as Metamorphe', *Museological Review* 18 (2014): 30–42.
27 Although somewhat problematic, one of the recurrent references when speaking to activists who are involved with Lifta is Machu Picchu. For instance, the architect Gadi Iron, who is part of the Save Lifta Coalition, states that 'we want to make a kind of Machu Pichu out of the village, Lifta is just as important'. Laura van Rij, 'Interview with Gadi Iron, Architect' on the Zochrot website, 1 May 2013, https://zochrot.org. We also encountered this reference in conversation with architects involved in the Save Lifta coalition during our fieldwork.
28. Mike Pearson and Michael Shanks, *Theatre/ Archaeology* (London, New York: Routledge, 2001).
29. A theory of performativity most frequently associated with the work of Judith Butler sees performative behaviour as one which enacts that to which it refers. In such anti-essentialism, gender, for example, can be described as performance, as both something one is doing and a thing done. Judith Butler, 'Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory', *Theatre Journal* 40, no. 4 (December 1988): 519–31. In the case of a site's historical examination and the VR experience described here, one could argue that the archiving gesture operates similarly; the archive is both acted upon, while its being enacted, that is, created anew by each user. An example of a performance art piece which intermingles site and archive – or for that matter, the subject of investigation and the evidence which allows its appearance, in a way that they become one and the same. This form of historical performance – where the act and the matter of examination are superimposed – can be found in the 2001 piece *The Battle of Orgreave* by British artist Jeremy Deller, who organised the restaging of a 1984 clash between police and striking miners. With this work, Deller resurrected the repressed memory of a troubled period of recent British history and, by involving protagonists from the clash, also triggered personal confrontations with that past. It was crucial that Deller used a battle reenactment society. Such societies are more frequently involved with English Civil War recreations. Their participation in this project points to the way in which English history tends to be addressed only when romanticised and no longer deemed to be of political impact.

Biography

Eliyahu Keller is an architect and a PhD candidate in the History, Theory, and Criticism of Architecture and Art programme at the MIT Department of Architecture. He is the co-editor of SCATTER!, the forty-sixth volume of the department's peer-reviewed journal *Thresholds*, published by the MIT Press in 2018. Eliyahu holds a Bachelor of Architecture from Israel, and a Master in Design Studies with Distinction from the Harvard Graduate School of Design. His doctoral research investigates the relationships between the rise of nuclear weapons, apocalyptic thinking and architectural visionary representation during the Cold War in the United States and the Soviet Union.

Mark Jarzombek is a professor in the history and theory of architecture at MIT. He works on a wide range of topics – both historical and theoretical. He is one of the country's leading advocates for global history and has published several books and articles on that topic, including the ground-breaking textbook entitled *A Global History of Architecture* (Wiley Press, 2006) with co-author Vikramaditya Prakash and with the noted illustrator Francis D.K. Ching. He is currently working on a book that interrogates the digital/global imaginaries that shape our lives. A chapter from that book, 'Digital Stockholm Syndrome in the Post-Ontological Age', was published in 2016 by the University of Minnesota Press as part of its Forerunners: Ideas First series.

Eytan Mann is an architect and game developer, currently pursuing a PhD in Architecture at the Faculty of Architecture and Town Planning at the Technion Israel Institute of Technology. Prior to the Technion, Eytan earned a BArch and MArch from Tel Aviv University, and a SMArchS degree in Design Computation from the MIT School of Architecture and Planning, where he also served as a researcher in the Design and Computation Group. His interests include digital humanities and heritage, spatial computing, gaming, and the history and theory of architecture. His research examines the relationship between new modes of remote sensing and user-interaction with the history and historiography of architecture in conflict zones.

Media Ecologies of the 'Extractive View': Image Operations of Material Exchange

Gökçe Önal

Introduction: geographies of extraction

> It is through and in media that we grasp earth as an object for cognitive, practical, and affective relations. (Parikka, 2015)[1]

In 2016, the Canadian Exhibition at the Venice Biennale lined up with a 'counter-monument' titled 'Extraction' – a round golden survey stake the size of a hand with a peephole at the centre, affixed on the ground at the crossroads of the British and French Pavilions 'under the pines and planes of the Giardini'.[2] A screen was placed underground below the golden stake, accessible to one visitor at a time who would have to kneel to see the short film screened through the peephole. The 800-second-long film from physically beneath the ground showcased 800-year-long chronicles of resource mining and distribution practices of empire building in Canada, 'unpack[ing] the questions of extraction as a framework to think the nation state of Canada via the relationships between architecture and its material tendrils and flows from a global perspective'.[3]

As the exhibition manifesto proclaims, at the turn of the twenty-first century, extraction industries occupy the forefront of urbanisation – 'from gold to gravel, copper to coltan, iron to uranium, fur to forest', the maintenance of human life depends on the continuous supply of resources.[4] Having prospered as part and parcel of colonial histories, resource industries today are shaping patterns of urbanisation as sites of extraction are fully territorialised in the logistical networks of supply chain capitalism.[5] The scholarly take on the subject has been offering new research frameworks for re-conceptualising cities as 'materialisations of far more vast and often … distant global territories', rather than as things in themselves.[6] As actors of this material exchange, remote sensing technologies partake in the continuous recasting of the earth as a 'visual epistemological entity defined by geophysics, data, and its imaging; [whereby] the earth becomes a source and a resource through software-aided visualisations that assist mining and drilling companies'.[7]

In this essay I investigate the agency of remote sensing technologies in the growing imprint of extractive operations. Departing from Heidi Scott's elaboration of 'colonialism's vertical third dimension', the study joins a growing body of literature that navigates infrastructures of contemporary urbanisations by their vertical reciprocities – engaging with altitudes as much as processes, energies and ecologies beyond territorial inscriptions. Scott's thesis on the 'need for a stronger theorisation of verticality… in relation to the search for and exploitation of subterranean resources' is developed here from the domain of air survey, which has historically remained at the forefront of extractive colonialism.[8] A closer reading of the vertical dimension affords,

following Scott, 'new insights into … the ways in which colonial landscapes were inhabited and given meaning'.[9] Thus attending the geographies of extraction from above, this article extends the research on colonialism's vertical third dimension from the physical to the sensory, numerical and temporal domains by a media-archaeological analysis of remote sensing applications in mining.

The extractive view

The ecologies of extraction, according to Macarena Gómez-Barris, materialise in the 'colonial paradigm, worldview and technologies that mark out regions of "high biodiversity" in order to reduce life to capitalist resource conversion'.[10] Historically, territorial demarcation had remained at the forefront of imperial growth. As postcolonial studies extensively argue, surveying practices have been operational in extending the colonial gaze and legitimising sovereignty over conquered land – marking out 'new worlds' by applications of modern mapmaking.[11] 'Seeing the globe and sensing the earth', Cosgrove states, 'have both shaped and been shaped by the Western imperial and colonial project of making the modern world'.[12] Equating the colonial gaze with the extractive view, Gómez-Barris illustrates how this 'cartographic impulse' is still operative in mobilising earth resources today:

> Before the colonial project could prosper, it had to render territories and peoples extractible, and it did so through a matrix of symbolic, physical, and representational violence … The extractive view, similar to the colonial gaze, … facilitates the reorganization of territories, populations, and plant and animal life into extractible data and natural resources for material and immaterial accumulation.[13]

Conventionally, the aerial view has been an ever-present measure of territorial knowledge and the rhetoric of seeing-is-controlling.[14] Any historical account of aerial survey will reveal a narration of technical advancement in the vertical that is often told in association with the 'utilitarian state, military, or municipal projects (reconnaissance, surveying, cartography, urban planning)' – taking off with the story of the 'originary watchtower' followed by 'the tethered war balloon, the reconnaissance plane, and geostationary satellites'.[15] Discourses of vertical mobilities, fantasies and representations are entwined around the triumph of human ascent and read as a progressive chronicle of the Western Enlightenment. In this account, the coupling of the aeroplane and the camera at the turn of the twentieth century emerged as a new information technology that, along with the apparent warfare applications, was integrated into early earth sciences such as geology and geography.[16] 'Erosion studies, agricultural assessments, land use practices and the counting of both domesticated and wild animals all were new uses for aerial images',[17] and soon, the potential of air photography in resource mapping was discovered:

> The emergence of techniques and technologies of seeing from the air moved hand in hand with … imperial exploration, colonial administration and development … Encouraging the cooperation of ecologists, soil scientists, foresters and airmen, aerial survey could correlate the patternings and dynamics of the relation between these different forms of disciplinary expertise and the material phenomena they wanted to understand.[18]

Twentieth-century advancements in surveillance technologies rendered aerial vision increasingly operational in managing natural resources. A new norm in earth observation was marked by the mid-century shift in remote imaging devices from airborne cameras to spaceborne sensors, enabling the physical world to be transcribed as 'electronically processible digital information'.[19] The planetary-scale infrastructures of remote sensing employed in mining industries today, from satellites to data centres to GIS applications, can be considered an outcome of this decades-old shift from analogue to

computational. Remote sensing thus partakes in all stages of contemporary extractivisms from 'exploration' to 'after closure' – proving particularly strategic in monitoring surface mineralogy and potential mineral deposits.[20] In order to trace the image operations intrinsic in the growing exhaustion of earth resources, the following discussion opens the black box of remote sensing technologies – its makings, applications, and histories – by employing a media-archaeological methodology.

Media-archaeological approach

Media archaeology is commonly understood as excavating historical formations of new media, yet the variety of scholarly interpretations of the method challenges the possibility of an overarching definition.[21] As far as I am aware, there have been at least two initiatives that bring media-archaeological methods into architecture and urban research – the first being the Canadian Centre for Architecture's Archaeology of the Digital programme, founded in 2012, which focuses on a number of projects produced throughout the 1980s and 1990s to define an origin of the digital in architecture.[22] On a different scale and time span, Shannon Mattern's *Deep Mapping the Media City* investigates the physical spaces in which communication networks have been historically 'entangling' themselves, employing a materialist and multisensory method she calls 'urban media archaeology'.[23] Following a distinct trajectory, I employ here a later interpretation of the methodology by Wolfgang Ernst, namely operative media archaeology, to enter the 'parallel, hidden reality at work' behind the human-machine interface of remote surveillance and formulate an investigation of the 'extractive view' from within the infrastructures of digital images.[24]

Operative media archaeology

The foundation of Ernst's approach is often attributed to the German media theorist Friedrich Kittler and his take on Foucauldian archaeology. Kittler's work is distinguished by his emphasis on the hardware materiality of media and the autonomy he ascribes to technical apparatuses, turning Foucault's historical a priori into 'technical a priori'.[25] 'For Kittler, media studies was never to be reduced to the play of interpretations, semiotic connotations, or modes of representation … Media work on the level of circuits, hardware, and voltage differences' – an account that largely went unnoticed in the humanities.[26] He urged for 'media-specific ways' of formulating Foucauldian excavations into culture, offering a method for tracing material-discursive relations from within the media apparatuses and infrastructures.[27] Hence in Kittler's thesis, as Huhtamo and Parikka further demonstrate, in order to 'understand media technologies from the typewriter to the cinema and on to digital networks and coding paradigms, one must take their particular material nature into consideration'– a position later embraced by Ernst.[28]

Similarly, in Ernst's interpretation of media archaeology, the machine takes priority. This later approach is primarily occupied with the material dimension of media infrastructures and its 'hidden' programmes, including digital media. Ernst's exclusion of the human senses from his methodology characterises the recurring concept of the 'cold gaze' in his work: a gaze that is intrinsic to the apparatus and precedes any historical or media-archaeological inquiry. Also associated with Vertov's kino eye, the gaze results from the break that humans induced with their own cultural regime, having built intelligent machines.[29]

Taking this 'break' as the growing opacity of technological systems vis-à-vis the human cognitive capacity, the following inquiry conducts a media-archaeological reading that departs from inside the sensing machines – engaging with the cold gaze of extractive capitalism before resorting to the graphic surfaces that stand at the human-machine interface. It offers an object-oriented analysis of the sites through which earth observation images are produced and unfolds the inner workings of

remote sensing machines in relation to the material displacement of natural resources.[30] The machinic intelligence of seeing from above is revealed here for its precise, reductive, and aggressive mechanisms that are appropriated for tapping planetary resources.

The discussion is organised in three parts after Sean Cubitt's thesis of geomedia – the three forms of 'mediated earth-observation' that represent different temporalities of tapping the Earth.[31] Accordingly, each section here pertains to a different form of (geo)mediation between the earth and its data, focusing on their operationality in mining industries. The inquiry thus begins with the first of these forms: the real-time inscription of earthly energy into 'entirely non-verbal [and] non-numeric' information, which Cubitt exemplifies with seismographic displays. In resource exploration, the first order of geomediation is found in the initial step of remote sensing, whereby the sensors are directly excited by the earth's electromagnetic energy and convert this stimuli into electrical signals, entailing a selective capacity that is highly functional in mineral detection. The next section follows the second form of geomediation, which represents the conversion of earthly measurements into numerical data 'in the interests of feeding a much larger machinery of integrated human and mechanical observations'. Here, the conversion of electrical signals into the computer-processable base of remote images – the numerical grid – is explored in relation to the extractive gaze. Lastly, conforming to the third geomedium which Cubitt defines as a machine-to-machine process exemplified by the 'financial visualisation software in commodity markets', the third section focuses on the predictive algorithms of metal futures in relation to the datafication of mining sites.[32]

Earth as electrical signal: selectivity

Remote sensing is the process of collecting data from a distance and processing the acquired data into information about the object, territory or phenomenon of interest. In the mining industry, sensing assumes various proximities – from aerial surveys for mineral deposits to on-site round-the-clock monitoring of excavations. The following discussion focuses on the sensing operations involved in the exploration phase of mining, which is examined under the broader practice of earth observation.

Earth observation systems typically rely on electromagnetic energy sensors to acquire data. 'All things on Earth reflect, absorb, or transmit energy', the sun being the main source of this radiation.[33] Sensors operate by measuring alterations in the intensity of this electromagnetic radiation that is either reflected by or emitted from the earth's surface. [Fig. 1] The entire scope of this energy is categorised by wavelength values along a spectrum, ranging from gamma rays to infrared to radio waves, with the human optical region occupying a tiny fraction in between.[34] [Fig. 2] An early distinction to be made here is between passive and active systems. The measurement of solar radiation as explained above commonly applies to passive sensors that are mere receptors of stimuli, examples being those aboard the Landsat, SPOT, Pléiades, EROS, GeoEye, and WorldView satellites.[35] Active systems, in turn, are themselves the energy sources that operate by emitting (typically microwave) radiation on the areas of interest and measuring the backscatter values, as in TanDEM-X, KOMPSAT-5 and Sentinel-1, along with the shorter-range laser light systems mostly found on drones. Both systems are consistently used for mineral exploration today.

A first glance at remote sensing reveals that there is not one all-seeing but numerous partially-sensing capacities monitoring the earth from above. Jacob Fraden describes a sensor as 'a device that receives a stimulus and responds with

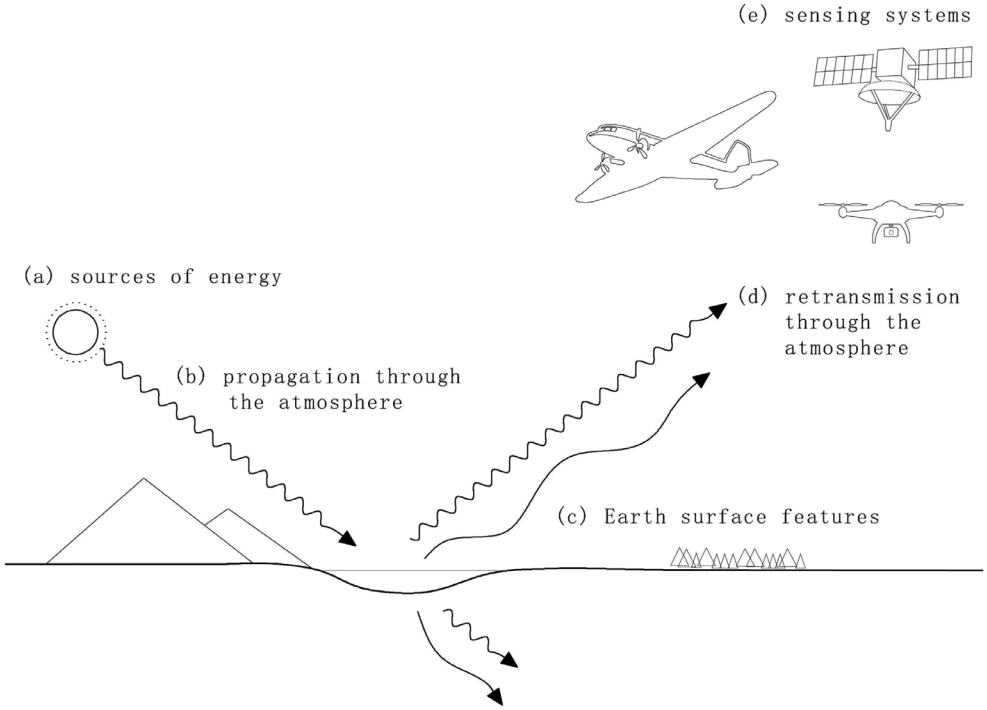


Fig. 1

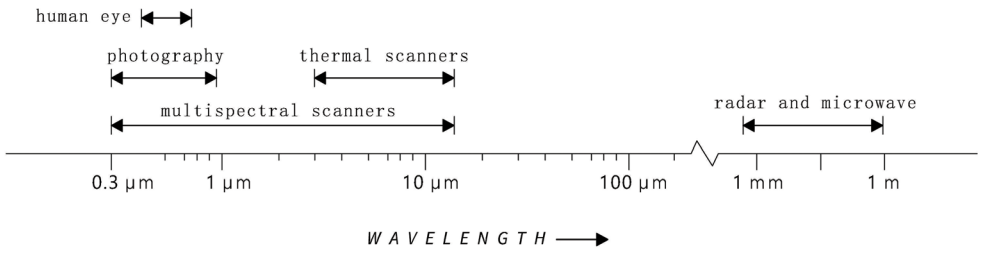


Fig. 2

Fig. 1: Electronic remote sensing of earth resources. Image drawn by the author based on Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman, *Remote Sensing and Image Interpretation* (New Jersey: Wiley, 2015), 3.

Fig. 2: Special characteristics of common remote sensing systems. Image drawn by the author based on Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman, *Remote Sensing and Image Interpretation* (New Jersey: Wiley, 2015), 11.

an electrical signal'.[36] In other words, sensors convert energy into electrical form, be it optical, acoustic, mechanical, or thermal, among others. In the search for mineral deposits, as in majority of earth observation missions, remote sensing begins with the process of data acquisition whereby the sensors on board of aerial platforms are stimulated by the electromagnetic energy reflected from the earth's surface. Collecting this energy involves an array of passive and active sensors as discussed above – ranging from multispectral (MS), hyperspectral (HS), light detection and ranging (LIDAR) and synthetic aperture radar (SAR), each operating within different spectral regions. The MS and HS sensors used in mineral exploration are sensitive to radiation wavelengths from approximately 0.4μm to 10μm – covering visible and near-infrared, shortwave infrared, and thermal infrared bands and proving most functional in detecting mineral species.[37] Whereas active sensors such as SAR typically rely on microwaves extending from approximately $3x10^3$μm to $3x10^4$μm (units kept in μm for comparison), and are most practical for detecting rock formations and eventually potential reserves. In targeting mineral deposits, data acquired from different spectral regions are often processed and combined with existing geological models, yielding viable information on several surface features like vegetation, mineralogy and geology, as well as groundwater upwelling or leakage.[38] Compared to the range of electromagnetic waves a photographic camera can register, which is limited to a span of 0.3μm to 1μm, the spectral expansion outlined above already points to a significant shift in the observational capacity of remote sensing systems – multiplying the extractive gaze in scope, sensitivity and precision.

Contrary to the rhetoric of omniscience prevailing in the contemporary cultures of planetary surveillance, namely the 'eye in the sky' phenomenon, a sensor's field of vision is hence highly specific and far from all-encompassing, limited by a number of operational parameters such as spectral sensitivity and spatial resolution, as well as several platform-dependent factors like manoeuvrability, repeat rate and ground coverage, among others.[39] Spectral sensitivity, as briefly outlined above, becomes an analytical entry point to the vertical dimension of extractive colonialism as it offers a particular technique of tapping earth resources.[40] All features on earth hold a unique reflection value called spectral signature – including minerals and rocks – and sensors pick up these signatures by measuring the electromagnetic energy emitted or reflected from the surface of earthly materials, thereby facilitating the targeting of potential mineral deposits in significant measures.

This renders the sensor diversity aboard a given satellite – or the constellation of satellites – of an earth resources programme crucial for reserve detection. Landsat, as the longest-running of such missions, had launched a total of seven rockets from 1972 to date, throughout which its band capacity was updated from four to eleven, its wavelength range multiplied by almost ten, and its sensor technologies revised four times, each generation incorporating its predecessor with several adjustments. Of the two Landsats still operative today, the most recent, launched in 2013 (Landsat-8), carries two sensors, the Operational Land Imager (OLI) and the Thermal Infrared Sensor (TIRS), and covers a wavelength region of 0.43 to 12.51μm by eleven spectral bands in total – seven of which prove essential for mineral exploration. This already implies a leap from the earlier Landsat Multispectral Scanners that yield a coarser resolution extending from 2 to 2.5μm with fewer operational bands. The technical enhancements of the past four decades hereby represent a substantial upgrade in the programme's spectral sensing capabilities, resulting in an increased capacity for mineral detection.

In similar earth observation programmes with constellations that have gradually consolidated over

time, like the SPOT and IRS families, comparable enhancements in resolution capacity and sensor variation are also evident. Over time, with every new launch, the number of bands per sensor multiplies while the bandwidth values continue to shrink – that is because a sensor operating in narrower spectral bands is able to distinguish the alterations in the reflected energy with higher precision, thereby providing higher spectral resolutions. Meaning, the narrower the spectral range of a sensor, the greater its resolution and the more valuable its data. With technical advancement, sensing devices are hence calibrated to see less and less in scope but with greater precision, growing all-the-more partial and network-dependent in their contribution to the 'world picture'. Here, as a media-archaeological inquiry into the sites of remote sensing begins to reveal, the extractive gaze is not one but many, and earth observation becomes a function of a sensing intelligence that is increasingly more specific rather than all-seeing – penetrating that of capital value and eliminating all other presence in between.

This selectivity in vision is what underlies the efficiency of sensors in the exploration phase of mining, ordering a world of – profitable – things that would otherwise remain underground. Similarly, active sensing also illustrates a degree of selectivity in its terrestrial contact, but by a different technique. Active sensors collect environmental data by transmitting pulses themselves and measuring the backscatter value, which characterises them in two distinct ways: unlike passive sensors, they penetrate the atmosphere regardless of atmospheric conditions, seeing through clouds, mild precipitation, fog and dust. Moreover, while their MS and HS counterparts provide spectral measurement, active radar sensors like SAR record two types of information per image pixel (picture element): amplitude and phase data – the former indicating the intensity of backscatter, depending on the terrain's surface roughness and moisture content, the latter referring to the distance between the sensor and the ground.

The wavelengths of transmitted pulses vary by sensor type and are often represented by letters, with X, C, S and L among the most functional bands in mining. In radar sensing, wavelength designation becomes critical, as 'it determines how the radar signal interacts with the surface and how far a signal can penetrate into a medium'; for example, while an X-band radar pulse with a wavelength of 3cm is able to penetrate cloud formations but is blocked by forest canopies, a 23cm L-band pulse begins to infiltrate the branches and tree trunks underlying the canopy, as well as certain types of soil or snow covering the land underneath.[41] Active sensing thus entails a physical process that exceeds mere seeing through – by a calibration of 20cm, signals move through layers of atmospheric formation, organic life and land cover, in order to tap surface topography. In targeting deposits, active sensors eliminate different registers of the visible – as in the removal of vegetation or snow from the ground – and facilitate the identification of certain topographic features like rings, shear zones, and lineaments, which, in some regions, may indicate the presence of volcanic pipes or base-metal mineralisation sites of capital value.[42]

An inquiry into the first geomedium of earth-sensing devices already begins to reveal the partial nature of an all-encompassing visual rhetoric that has been a currency in the history of extractive colonialism. Today, in mineral exploration, spectral and radar remote sensing data are used routinely and in conjunction with one another, often integrated with geology, geophysics, geochemistry.[43] By its multiplicity, range and precision, the electromagnetic dimension of the extractive gaze thus entails a surveillance regime that is symptomatic of what Bruno Latour defines as the 'oligopticon' – the spaces affording 'sturdy but extremely narrow views of the (connected) whole', from where a very tiny fraction of the world is seen, but is seen too well.[44] It is only in constellations that these views begin to resemble anything pertaining to the whole.

Evidently, the question of seeing that characterises Latour's oligoptica is already reframed here as one of sensing. The spectral element of the colonial vertical dimension reveals the 'unseen' mechanisms that significantly refine the scale and precision of extractive operations in contemporary mining practices. Sensors physically tap, sort and distil planetary resources through numerous spectral bands before on-site mining begins. The process of geomediation here thus endures a selective act of ordering and commodifying the earth's energy in the form of electrical signals, resonating in Gómez-Barris's argument that the extractive gaze 'mark[s] out regions of "high biodiversity" in order to reduce life' into materials of exchange.[45] It is from this real-time response of the sensor in the form of electrical signal that the second form of geomediation departs.

Earth as numerical data: enhancing image operations

Once the sensor converts the incoming stimulus into electrical output, the following step involves an analogue-to-digital conversion that quantises the electrical signal into a set of numerical values – making it eligible to be channelled, stored, and processed digitally.[46] 'Sensors intended for the artificial systems must speak the same language as the systems "speak". This language is electrical in its nature', as Fraden suggests, 'and the sensor shall be capable of responding with the output signals where information is carried by displacement of electrons, rather than ions'.[47] Figure 3 illustrates the process by which the (continuous) electronic signal from the sensor is sampled in evenly-fixed time intervals and recorded at each sample point as a (discrete) number corresponding to its frequency value. The process of conversion here – from electromagnetic radiation to electrical signal to binary numerical data – marks a critical moment of the abstraction of an earthly phenomenon into computer-processable information. Notwithstanding the graphic component of the term surveillance, the steps of remote observation investigated so far are still less about seeing than actually tapping earth resources to retrieve, refine and mobilise them across platforms, whether in the form of waves, currents or numbers – processes that are commonly associated with the more aggressive applications of on-site mining.

Once the analogue-to-digital conversion has mediated earthly material as numerical value, or as binary code, the information is registered in a computational system for further processing. In earth observation systems, each converted number represents the average radiation intensity per 'sampling interval' of the sensor signal, constituting one pixel of the digital image. [Fig. 4] The resulting two-dimensional array is the widely known raster grid, which endows the image with an 'inherent mutability' as William Mitchell suggests. Reminiscent of Vilem Flusser's 'code of images' – a sign system ordering the world of things into 'significant surfaces' – the numerical grid, at this precise moment of conversion, points to a particular intelligence of making sense of the world. Shannon Mattern refers to this organising principle, or intelligence, as the 'code-space of machine vision'. In an inspiring gesture that stretches the discussion of 'mapping' from the GPS grid of self-driving cars to the cartographic subjectivity of animal Others, Mattern draws a discursive line from the machine to human to non-human sensors – navigating both computational and lived 'multisensorialities' not as the two ends of a spectrum but rather as different registers of knowing.[48] Understood in this vein, the numerical grid becomes the ordering structure that holds the sensor's electrical signal in computer-processable digits, rendering the earth readable for machine intelligence.

In histories of aerial views and settler colonialism, the grid comes as a loaded concept – or as a cultural technique, as Bernhard Siegert suggests.[49] It wasn't until the 1970s that computer-processable data

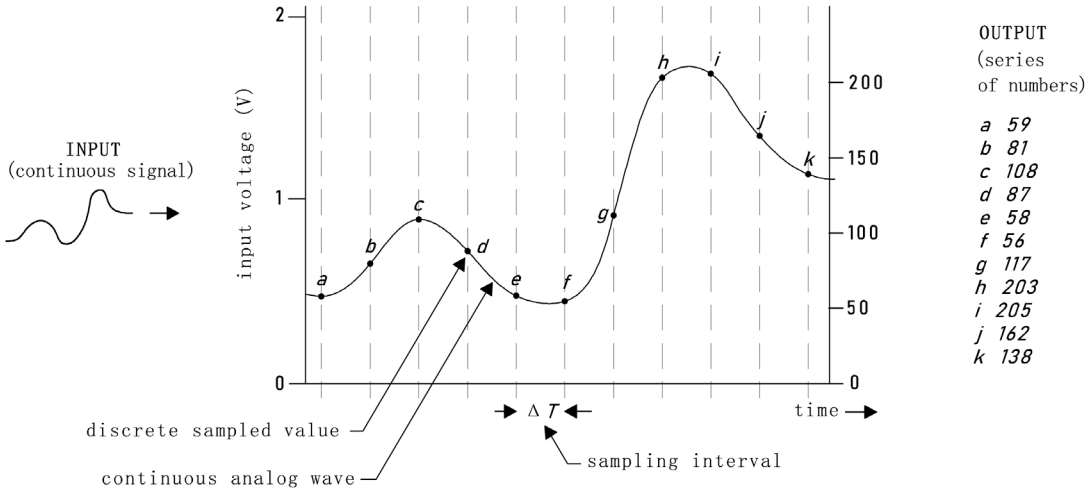
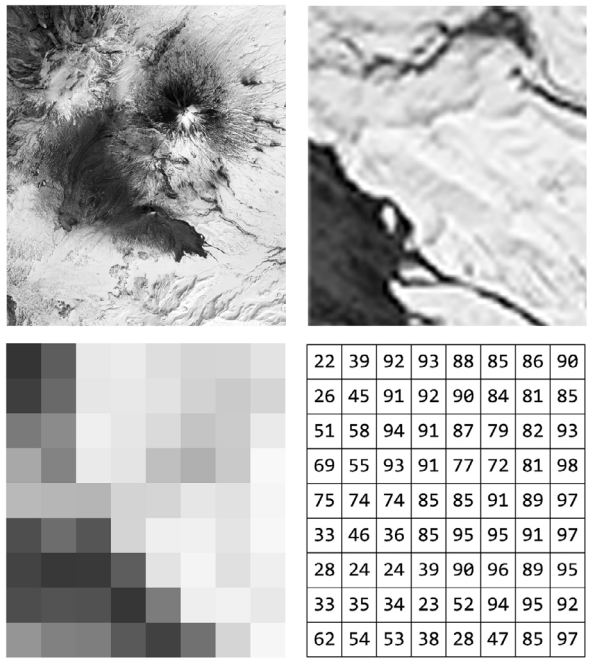


Fig. 3



22	39	92	93	88	85	86	90
26	45	91	92	90	84	81	85
51	58	94	91	87	79	82	93
69	55	93	91	77	72	81	98
75	74	74	85	85	91	89	97
33	46	36	85	95	95	91	97
28	24	24	39	90	96	89	95
33	35	34	23	52	94	95	92
62	54	53	38	28	47	85	97

Fig. 4

Fig. 3: Analog-to-digital conversion process. Image drawn by the author based on Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman, *Remote Sensing and Image Interpretation* (New Jersey: Wiley, 2015), 26.

Fig. 4: Basic character of digital image data. Top-left image Bezymianny Volcano Natural Color, April 25, 2011, Wikimedia Commons, https://commons.wikimedia.org. Last accessed: September 27, 2019. Rest is drawn by the author based on Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman, *Remote Sensing and Image Interpretation* (New Jersey: Wiley, 2015), 25.

became the picture element of earth observation. Earlier generations of analogue air photographs were captured on films, without the inherent numerical configuration of digital images; while they saw various – and comparatively coarser – applications of the grid on the picture plane. 'Colonist logics of grid imposition fixed the identity of land and its ownership not so its provenance could remain static, but *in order for its identity and properties to be circulated and exploited*', as Adey suggests, '[and] effectively liquefied the immutable properties of space into a region of transaction and exchange'.[50] In other words, the burgeoning practice of photographic survey in the early twentieth century saw the aerial grid become a pervasive geometry of power that satisfied a sovereign tendency to 'make a world that exists as binary order', allocating the land and all that is native to it as distinct, independent entities.[51] Otherwise understood as a radical separation between data and its address, the grid thus became a representational technique to identify, single out and mobilise those endemic properties of space – populations, vegetation, resources – within systems of material exchange.[52]

'If an imperial eye brought certain objects into sharp focus, it did so by a process of selective blindness'.[53] Earth observation sensors today have refined this selectivity by the precision of micrometres, while the numerical grid allows multiple strands of the earth's electromagnetic energy to be stored in a single picture element simultaneously. [Fig. 5] The conversion from analogue signal to digital number here marks the transformation of earth resources into Latour's 'immutable mobiles,' often transmitted to ground stations in vast quantities but one pixel at a time.[54] Once quantified in separate groups, the-earth-as-data becomes available to operations of sorting, retrieval, distribution and exchange, enabled by a series of manipulation and interpretation algorithms known as digital image processing, seeking to optimise specific parameters of the image for predefined end-uses. The representational separation of data (natural resource) from its address (geolocation) here affords an extractive capacity symptomatic of, yet considerably beyond, the proto-computational colonial grid.

With geolocation as one of the many layers assigned on the raster grid, the image begins to resemble a stack of numerical arrays – each layer holding different spectral, temporal and spatial information. In mineral exploration, the number of spectral layers stored per pixel – or the spectral profile – becomes a critical parameter for image processing. For example, for an MS sensor, the spectral profile can go up to twelve depending on the satellite model. For an HP sensor, the band information per ground pixel can commonly exceed two hundred. In either case, the numerical stacks registered on grids offer a significant malleability for further image processing – as imaging algorithms typically work with combinations of three or more of these layers.

Most common image processing applications in mining are calibrated for surface mapping – examples of which include the merger of different bands to acquire colour composites for lithologic discrimination, particularly if the contrast levels are enhanced; or the comparison of band ratios to enhance rock alterations. Another prevalent algorithm for mapping is classification, whereby pixels with common spectral properties are identified by predefined categories or assigned to separate groups to distinguish between land cover types, proving particularly useful for ore detection and for creating thematic maps. Among others, filtering algorithms are also used for processing surface conditions, as they help to eliminate undesired ground features – like vegetation or snow – by removing their bands from calculations, or to suppress spectral noise for higher component analysis.[55] Important to note here is the range of image-related operations enabled by the numerical interface of computational algorithms:

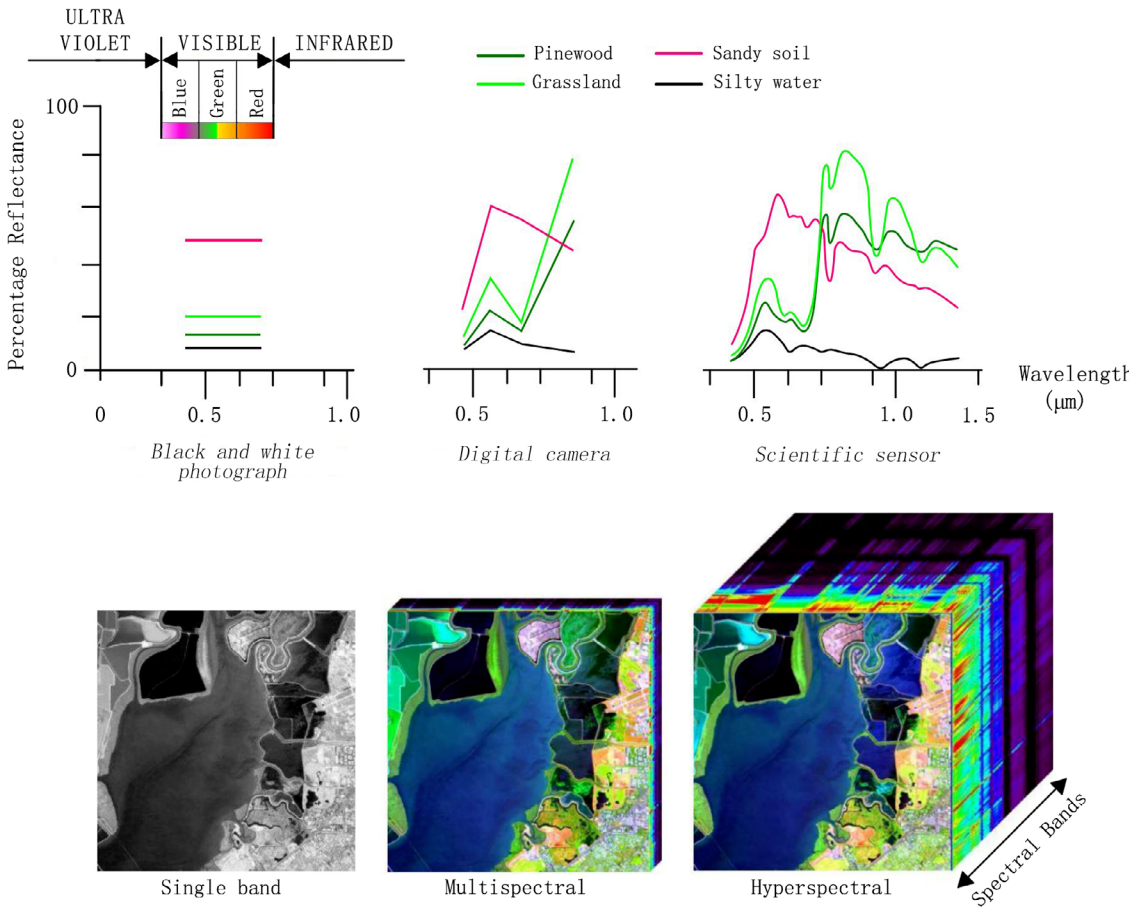


Fig. 5: Differences in the spectral resolutions of single, multi and hyperspectral bands and their impact on resource detection. Image edited by the author based on Wikimedia Commons, https://commons.wikimedia.org. Last accessed: February 8, 2021.

once converted into integers, the-earth-as-data is fed into a series of (digital) processes that are conventionally associated with on-site mining rather than remote sensing, such as sampling, grouping, filtering, removing, separating, digging out and circulating, among others. The exhaustion of land thus begins not on site but with the datafication of the earth from above, rendering resources at once visible, malleable, and profitable. The operational capacity here is bound by a platform interoperability afforded by the logic of digits and mathematical calculation – or what Ernst calls the 'numerical sublime'– of sensors, computing platforms, high-bandwidth networks, and database systems.[56] This interoperability today points to the arithmetic subface of digital images, from where we will turn to the third form of geomedia.

Earth as futures: aerial prospect and feeding data forward

The 'extraflood' of observational data continues to challenge computational models by an increasing demand for the 'interoperability' of information – its transfer, systematisation and use across platforms. As part of a new line of computing technologies developed for managing, visualising and analysing the growing number of datasets, tracking technologies emerged as a procedure of predictive analytics that derive prospects – that is, futures, probabilities and forecasts – from retrospective readings of accumulated data.[57] Predictive algorithms search through large amounts of historical datasets to track and reveal previously unknown patterns that 'might suggest a continuity, a propensity, a taste of what is to come', as Jordan Crandall defines – a process that extracts tendencies from formerly undecipherable configurations of archived data, by far exceeding the capacities of unaided human cognition. Enhanced by the developing technologies of sensing, data storage, processing power and data-mining, this statistical operation (of 'deriving from the past … a silhouette that models future positions') brings about a new form of geomedium in earth observation practices.[58] This section taps into the temporalities of the synoptic view through the concept of the prospect – a term that both pertains to histories of aerial views and metal markets as the rationale of looking forward in time and space.

Surface and subface prospects of aerial view

The noun prospect registers in the cultural history of aerial vision almost concurrently with the development of the bird's-eye view as a Renaissance art tradition. Typically associated with earlier oblique views as experienced from high vantage points like hilltops, watchtowers or the belvedere, a prospect etymologically signifies 'looking forward' – both in the sense of 'an extensive or commanding sight or view', and of seeing into the future. 'In the seventeenth century', as Mark Dorrian remarks, 'both "magic mirrors" (mirrors that foretold the future) and field glasses, spy-glasses, and telescopes were called "prospective glasses"'.[59]

In his article 'Prospect, Perspective and the Evolution of the Landscape Idea', Denis Cosgrove refers to the historical connotation of the 'prospect eye' as both pertaining to a gesture of 'seeing at a distance' and to a financial investment in land: 'the verb "to prospect" emerged in the nineteenth century referring to the particularly capitalist activities of speculative gold mining and playing the stock exchange. It is interesting to note how "speculation" has itself roots in visual terminology'.[60] It is from this critical connection between looking forward and looking for deposits – or between the synoptic view and what is today called the 'metal futures markets' – that we will enter the third form of geomedia.

Subface prospects of the digital earth

Today, the term prospect continues to expand toward predictive analytics and financial speculation by the developing technologies of data visualisation. As briefly outlined at the outset of this section, the predictive capacity of automated data

processing lies in its ability to uncover patterns and simulate emergent ones from existing datasets, at scales radically beyond what human cognition affords. In environmental monitoring, as Parikka and Gil-Fournier suggest, 'forms of future-making [as such] have been part of the geographical and geological visualisation that is of significant economic and security related importance'.[61] For understanding how future-makings – as predictive algorithms and financial speculation – continue to mobilise mineral deposits by the organisational logic of world markets, Cubitt's third geomedium offers valuable insights.

Quite unlike the former two, the third mode of geomediation elaborated by Cubitt, namely the 'financial visualisation software in commodity markets', conforms to a machine-to-machine process that is not only an index of change, as are the preceding examples of 'vectoral analogues' and 'numerical translations', but itself induces change. The author locates this third form in automated (or algorithmic) trading, which is the last phase of an ongoing process of computerisation in finance sector since the 1980s. Automated trading is the computer-aided method of placing buy and sell orders using a set of (execution and proprietary-trading) algorithms, at speeds and extents that are only achievable by the processing power of computers. 'Seventy-five percent of trades in contemporary financial markets are algorithmic', Cubitt further remarks, with the highest rate in futures markets.[62]

The futures, as implied here, are 'highly standardised forward contracts' that enable a certain asset (gold, grain, mortgages, electricity, and so on) to be bought or sold at a fixed price on a future date.[63] 'The goal is … a time-annihilating one: to collapse the future into present [profit]' through processes of speculation and hedging.[64] This is why futures deals are also understood as financial derivatives, for they derive value from variations of the underlying assets, be it commodities, currencies, stocks or bonds. The size of futures markets today, however, radically outpaces the world's gross domestic product. Orit Halpern, in her inspiring study of the Malartic gold mine, explains how derivates shape metal industries, both in the present and in prospect:

> Facing limits to planetary resources and maybe even life, we have turned to ubiquitous computing, geo-sensing, and algorithmic trading. To avoid these terminal thresholds of resources and toxins, the mine must conquer the limits of space by deriving value from the future. Enter derivatives … To achieve this seemingly sisyphean hedge-bet, we transform space into logistical movements grounded in a most literal connection between data mining and metal mining.[65]

Indeed, the 'pervasive' infrastructures of sensors, computing platforms and relational databases confuse any clear divide between the two forms of mining through a continuous conversion of metals into data, and vice versa, as Halpern suggests, 'not as metaphor, but in practice'. Cubitt locates the third form of geomedia precisely in this numerical translation between reserves and futures: 'Financial visualisation software in commodity markets', he argues, 'not only gives direct accounts of geology (reserves), human interventions in them (extraction) and simulations of their likely use (futures) but actively produce those futures by fixing future trading prices'.[66] It is in this future-making capacity of finance software that it differs from other forms of geomedia – for it is not only an index of change or a simulation of the future, but it induces change by betting in future values. At any given time, one can sell or otherwise swap these bets with other bets to make a profit, meaning, speculate on the futures contracts.[67] Precious metals and gold in particular, as Halpern argues, are long-standing hedge bets in these speculative markets.

Cubitt refers to this form of geomedium as 'direct data' in the sense that it is not intended for meeting a human end but rather acts upon 'algorithmic,

machine-to-machine plays on the market … with APIs capable of running on an ordinary laptop to handle data streams from twenty-three exchanges … including quotes, trades, and indexes at speeds of over two million updates per second', where a single nanoseconds of delay turns into competitive disadvantage.[68] This is not a system for a human to trade, intervene, or even comprehend, but merely observe as far as the software interface allows, like an opening to an arithmetic world. In this regard, the computing platforms involved in trading do not require such interface visualisations to complete transactions, as they 'know' time merely as a mathematical function:

> At this level, 'real-time' no longer means the time of human perception. It belongs to a concertinaing of time, where past performance becomes standing-reserve, future repayments (permanently deferred) become present profits, and the present itself is truncated into a vanishingly small, relativistic point.[69]

What allows planetary prospects – of geology, ores and minerals, among others – to crystallise in speculative markets, as this article has so far outlined, begins with the 'datafication' of mineral reserves. The fabric of remote, airborne, and ground-based sensors covering the mine partakes in the reconstruction of these reserves as numerical value to be communicated not only across networks, platforms and space, but also across pasts and futures. Yet what renders finance markets a curious case here also lies in their negotiation of surface-subface relations: following the line of three geomedia, one might suggest that data (or the-earth-as-data), although exponentially multiplying in quantity, reveals itself ever less on the graphic interface. The growing subface operationality hence results in a diminishing surface visibility, as ecologies of sensors, cognisers and processors become less and less 'human'.

Conclusion: registers of the visible

The summer of 2019 saw the outbreak of a nationwide outcry in the Biga peninsula, Turkey, when the Canadian-based company Alamos Gold removed 195 000 trees during the development of the Kirazlı gold mine, situated in the immediate vicinity of the Mount Ida National Park.[70] The protests flared up as soon as the aerial photographs of the site were made public, revealing the aggressive scope of deforestation in the area, only fourteen kilometres away from the largest freshwater reservoir in the region. Thus began the activists' 'Water and Conscience Watch', promoted with the popular slogan 'Mount Ida is more valuable on the surface than the subsurface'.

Yet Alamos Gold's presence above and below the district predates this incident by almost a decade. The company has been navigating the 'surface' of Kirazlı, Ağı Dağı and Çamyurt regions in the peninsula from 2010 onward, and has quantified a total gold reserve of three million ounces throughout the exploration phase, estimated to be worth over €4 billion.[71] Alamos received the final environmental approval for excavation as early as 2013, yet the public unrest has halted the project twice since then: initially by a 2013 court order suspending further exploration activities, and later by the Turkish Department of Energy and Resources denying the company's licence renewal request in 2019, amid escalating civil dissent. The drone photographs of the deforested area became the symbol of the second and the more radical wave of protests, sparking the largest public uprising ever to run against a mining project in Turkey.

An object-oriented examination of Ernst's 'cold gaze', or what Mattern calls 'machinic sensibilities', reveals violence to be an intrinsic capacity of 'looking' down, as the 195 000 trees, along with the biodiversity they host, are algorithmically eliminated by remote sensing systems prior to their physical

removal from the site.[72] The Kirazlı mine today remains closed, but the extractive gaze has already tapped the ground before on-site drilling began, extracted the gold in digits before it was chemically recovered from the ore by cyanidation, and quantified the asset, the three million ounces, in order to feed it into 'the circulatory system of capital' as stock futures, eliminating all 'Other', non-profitable presence in between. Notably, the view from above here works both ways, simultaneously sustaining the extractive gaze alongside the activists' rhetoric against resource exhaustion and water pollution in the Mount Ida region.

Scott considers a closer reading of colonialism's altitudes to yield 'interconnections of the material and the discursive', as she 'vertically extend[s] scholarly explorations of colonialism to subterranean spaces'.[73] A focus on the digital image here overturns the author's vertical reading upward, toward the sites of remote surveillance, and shows the processes of imaging in mineral exploration to be capable of tapping, selecting, eliminating, removing and mobilizing resources – operations more commonly ascribed to on-site mining. The non-human logic of relating to the environment examined so far interrupts the inherent linearity of the 'vertical dimension' by unfolding its spectral, numerical, and temporal elements; and brings forth multiple registers of the earth beyond surface visibilities – in the substance of waves, currents, numbers and algorithms.

From inside the sensing machines, new material-discursive relations emerge between machine vision, cultural histories of the aerial view and extractive capitalism. Thus extending the study of the mining site into the domain of surveillance infrastructures, the article contributes to the burgeoning field that examines the spaces of extraction 'beyond the mere wresting of minerals from the soil … as one that vastly transcends the territoriality of extraction'.[74] Latent configurations of extractive violence comes into view through a close examination of the 'machinic sensibilities', offering a renewed lens for considering contemporary forms of urbanisation within systems of material exchange.

Following the line of 'mediated earth observations' from rare earth minerals to spectral waves, electric currents and digital integers, well-established rhetorics of the aerial view as ubiquitous, all-seeing and omnipotent begin to yield contradictory aspects: that the extractive gaze in not one but many, not omniscient but narrow, and is indeed limited by several platform-dependent parameters like manoeuvrability, orbiting rate and coverage area. The remote image is understood here as an ecology rather than a (graphic) screen phenomenon, while seeing becomes a question of sensing in tapping the earth's resources. A media-archaeological reading thus brings forth the extractive codes of the remote view, exposing its precise, selective, vectoral, and speculative capacities of ordering natural resources into materials of exchange – enabled by the datafication of the earth from above.

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74. Arboleda, *Planetary Mine*, 5.

Biography

Gökçe Önal is a PhD candidate at TU Delft Faculty of Architecture with the research group Border & Territories. She has taught in METU (2013–16) and TU Delft (2016–17), and contributed to the development of the TU Delft-based MOOC project 'Means of Architectural Design' (2017–19). Her doctoral research investigates remote sensing practices and digitisation in relation to the developing cultures of architecture.

The Spatial Extensions of the Right to Seek Asylum: The Eastern Mediterranean Refugee Route

Melina Philippou

In August 2015, in light of the worst refugee crisis met on European ground since the Second World War, Berlin renounced the Dublin agreement and introduced an open-door policy in Germany.[1] This allowed the displaced population to seek asylum in EU countries, regardless of entry point.[2] The shift materialised spatially as a formal activation of the East Mediterranean Route (EMR), defined by Frontex, the European Border and Coast Guard Agency, as a humanitarian corridor to safe ground used by migrants and refugees crossing through Turkey to the European Union via Greece.[3] [Fig. 1] During the autumn of 2015, the EMR accommodated a population approximately thirty times greater than the previous year and reached its highest level since the beginning of border crossing data collection in 2007.[4]

This essay examines migration, refugee, and border management through cartography, to cast light and explore alternative ways to access, represent and interpret the spatial dimensions of legal processes, or in this case, their overruling, on a regional scale. I employ mapping in the following ways: first, as a method to investigate the EMR, an emerging system in flux amid the refugee crisis; secondly as a means to unveil the EMR processes, and lastly as a medium to critique the predominant narrative of the EMR formalisation as a humanitarian infrastructure. The visualisations examine an alternative reading of the EMR as the spatial expression of pro-closure policy, a space of exception in conjunction with Giorgio Agamben's investigations on power, state of emergency, and space, for the control and delay of the population on the move until an externalisation agreement takes place.[5]

The visualisations apply to the period from October 2015 to March 2016. During October, the inflow of migrants and refugees to Europe through the EMR reached its peak with more than two hundred thousand arrivals.[6] In the subsequent months, adverse weather conditions, increased border controls, and restrictions of entry discouraged and significantly reduced the population on the move. The EU suspended the temporary formalisation of the EMR in March 2016 with the signing of the EU-Turkey statement.[7] This article looks at the participation of countries directly involved in EMR operations during that time, namely Greece, North Macedonia, Serbia, Croatia, Slovenia, Austria, and Germany.

The mapping of the EMR corridor depicts both the refugee itinerary and the institutional mechanisms to exercise power.[8] In this interconnected polarity, I focus on exploring the latter, not least because both

the author's privileged position and the 'power of the cartographic gaze to code subjects and produce identities' are problematic in communicating the refugee experience.[9] Instead, the visualisations focus on reconstructing the ways institutional responses materialise in space, interpreted through the analytical lens of the philosophical stream of the ethics of admissions.

The cartographic investigations of this article draw from the academic practice of Hackitectura.net, Estudio Teddy Cruz + Fonna Forman and Forensic Architecture. What they all have in common is the engagement to the act of mapping on sites of contested jurisdiction as a medium of political activism in the intersection of visual arts and critical cartography. In all cases, the focus is on the spatial articulation of political realities. In the Left-to-Die Boat, Forensic Architecture employs remote sensing and witness reports to map the spatial events leading to the deaths of sixty-three asylum seekers. The resulting report supported the legal case of a European NGO coalition concerning non-assistance at the Mediterranean sea.[10] The conflict process diagrams of the San Diego-Tijuana border by Estudio Teddy Cruz + Fonna Forman employ relational political cartography to identify areas of meaningful interventions for urban-architectural practice that supports marginalised communities.[11] Lastly, Hackitectura's cartographic representations of the Strait of Gibraltar employ tactical and embodied methods to expand our understanding of the Spanish-Moroccan border region as a political space.[12] Cartography as a tool for political activism in this essay lies between the objectives of the work mentioned above. That said, it is less about generating evidence for the support of legal sanctioning like Forensic Architecture does, or designing an interface for the reshaping of urban policy as in the work of Estudio Teddy Cruz + Fonna Forman and more about expanding the understanding and interpretations of contemporary humanitarian infrastructure and generate debate in the public realm.

My visualisations reflect the rise of multiplatform counter-cartographic work that employs both institutional and bottom-up approaches evident in the work of Forensic Architecture.[13] The essay draws data primarily from ethnographic fieldwork conducted in January 2016 along the EMR corridor. The fieldwork involved environmental observation, photography, personal interviews, and GPS tracking. I travelled parallel to the population on the move within and outside refugee spaces taking into account the viewpoint of the forcefully displaced, agents of border zone governance and the host community. I acknowledge both that my mobility derives from the privilege of citizenship and the value of a multi-sited method of acquiring data especially in circumstances of data scarcity that characterise extraordinary events of a short life.[14] This method was rendered critical due to the inconsistency of non-formal data online, the inertia underlying institutional mechanisms of producing and disseminating relevant information on mobility and migration, and the challenges of the EU periphery to register data effectively.[15] The quarterly aggregation of data related to migration by Frontex and UNHCR fails to describe fast-paced transformations or shifts that occur for a shorter period of time. These transformations require a much finer granulation of data, and in this direction the visualizations examined data per day. Complementary to site-specific evidence-collection and first-hand testimonials, cartographic investigations incorporate data from grassroots and NGO reporting, the systematic observation of the press, GIS, and satellite imaging.

The qualitative inquiry looks at the EMR states' roles, responsibilities, and interdependencies, their strategies for inclusion and exclusion, and policies related to the ethics of refugee protection.

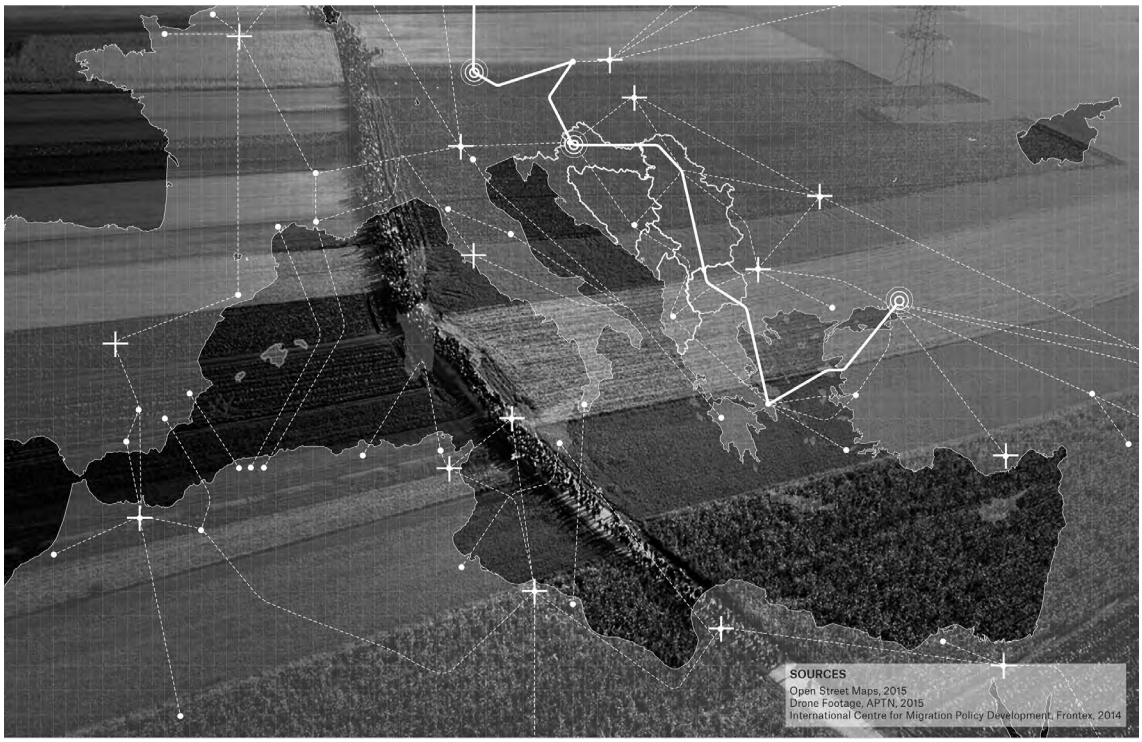


Fig. 1: The Eastern Mediterranean Route. Source: Author.

Systematic observations of the EMR territory highlight correlations and spatial relationships among: 1) geographic information of the EMR territory; 2) programmatic data of border-zone processes from entry to first instance asylum decisions; 3) state sovereignty claims such as border controls and retreats from sovereignty like membership to Schengen; 4) legal data on refugee protection and 5) critical approaches to the ethics of admissions referring to the discourse on whether to include or exclude a migrant and refugee from a political community.

I trace these investigations on three visualisations: first, a matrix of the juro-political framework of displacement. [Fig. 2] The matrix allows me to position the temporary formalisation of the EMR in relation to critical positions on refugee policies and landmark agreements on migration and refugee protection. Secondly, a series of maps of the EMR border passages from Greece to Germany. [Fig. 3] The maps introduce the spaces, programme, process, and agents of border management for migrants and refugees. The maps' iconography aim to separate both from the aestheticisation of geographies of conflict and the technocratic positivism of data analysis. The maps share aesthetic affinities with process maps and conflict diagrams by Teddy Cruz + Fonna Forman. The series examines the spatial relationship of civilian and non-civilian border spaces and compares border management strategies across the EMR. Thirdly, a synthetic diagram of the EMR apparatus. [Fig.4] The diagram makes visible the EMR spatial mechanism in its totality. The itinerary to seek asylum is presented as a sequence of border controls with intermediate confinement stations and a possible exodus through first instance asylum decisions. The visualisation integrates cartographic elements, notations of refugee spaces, and text about their programme. The drawings cast light on the EMR modes of operation and construct a narrative in the pursuit to connect ethical dispositions on the subject of admissions, to legal categories such as the state of exception and their materialisation in space.

Refugee policy and the ethics of admissions – a theoretical framework

The EMR made visible the EU position on forced displacement. To contextualise the EMR as a political space, it is essential to discuss the suspension of the Dublin regulation and opening of the corridor within the legislative framework of refugee protection, and the ethics of refugee policy.

The basis of refugee protection lies in breakthroughs in the aftermath of WWII.[16] Article 14 of the Universal Declaration of Human Rights (1948) states that 'Anyone has the right to seek and enjoy in other countries asylum from persecution', meaning that under international law, the forcefully displaced have the right to file an asylum application in the country of preference. That said, Article 14 does not ensure the right to receive asylum. To grant asylum is tied to the state as an option, not to the refugee as a right, demonstrating the prevailing state sovereignty over human rights.

The Convention Relating to the Status of Refugees (1951) introduces the principle of non-refoulement. It refers to the obligation of states to refrain from repatriating or returning a person to a third country where her life would be in danger. In comparison to asylum, non-refoulement does not assign political rights and allows repatriation when the conflict is over. Sovereign states often denounce the minimum obligations of non-refoulement by preventing access to their territory with fortification or externalisation strategies.

Governmental institutions can temporarily abandon these landmark agreements on the protection of refugees within a state of emergency. The state of emergency is an abstract legal category

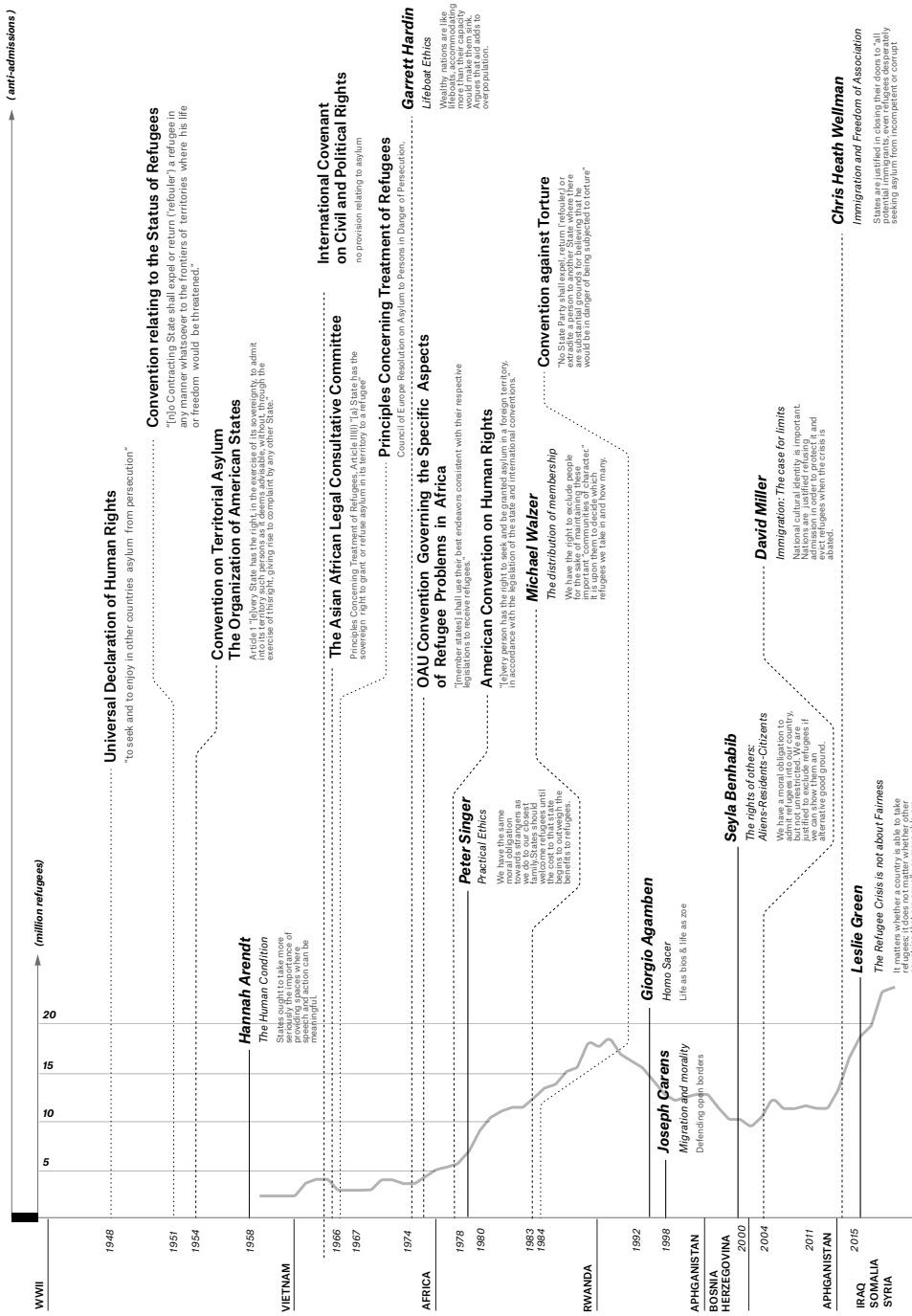


Fig. 2: The legal and ethical framework of admissions. Source: Author.

and according to the work of Agamben, the basis of sovereign power.[17] It refers to the temporary suspension of the legal order in claims of protecting national order.

The Dublin Regulation is the EU legislation related to admissions.[18] The founding principle is that a third-country national seeks asylum in the first European country of arrival, where the local authorities identify her. As a result of the Dublin agreement, EU countries on the European Union's external borders receive the majority of asylum applications. The suspension of the Dublin regulation in conjunction with the Schengen treaty for abolishing internal national borders allows the forcefully displaced to exercise Article 14 and file an asylum application to any EU country. The population fleeing from the Syrian conflict travelled through Turkey to transgress the Eastern border of Europe. The unprecedented flow of the population on the move, Germany's call to arms and the Dublin Regulation suspension resulted in the recognition of the EMR – formerly an illegal smuggling path – as a formal corridor to asylum-seeking processes.[19] The formal acknowledgement of the EMR shifted at least partly the focus of Frontex from the protection of the Schengen system to the receiving and registration of asylum seekers. The shift demonstrates the intention of the EU to undertake the obligations of non-refoulement and to respond to the issue of forced displacement within its grounds. According to Frontex data, it was the first time after WWII that the EU faced statelessness in its territory to this extent.[20]

The question of reception of the Other is a double-sided predicament. On the one side, it has to do with admissions and on the other with a necessarily political question of sovereign power. The ethics of admissions is a stream of the philosophical discourse related to the moral responsibility to admit refugees expressed in granting asylum and the ethical basis of closure as a means to protect a given community connected to policies of containment such as refugee camps and externalisation.

Arguments leaning to the defence of admissions discuss the moral responsibility to admit refugees and emphasise the harm caused by statelessness.[21] Hannah Arendt points to the ontological deprivation in conditions of statelessness based on the lack of political agency.[22] Giorgio Agamben describes the refugee camp as a political space of legal arbitrariness where human life is reduced to the physical needs of the body.[23] Seyla Benhabib acknowledges refugees' right to political and civil membership while justifying cases of exclusion if there is an alternative safe ground.[24] The EMR formalisation as a humanitarian corridor towards asylum-seeking procedures aligns with pro-admissions arguments.

On the other side, arguments leaning to the defence of closure elaborate on the right to protect the country from threats regarding identity and financial stability. These ideas are tied to the framework of the nation-state and the political dynamics associated with sovereign power over space. Michael Walzer and David Miller prioritise national self-determination and the state's right to decide who aligns with the values and goals of society. For them, unique political communities are essential and require a level of closure in order to be sustained. The operation of Frontex at the external borders of the European Union reflects this approach. Garrett Hardin discusses admissions in the context of resources and their distribution. Since any country has finite resources, receiving more people than its capacity will harm both nationals and refugees.[25] A different approach argues for closure due to the lack of responsibility for the causes of forced displacement. For example, Chris Heath Wellman does not defend admissions of refugees 'from incompetent or corrupt political regimes'.[26] In these cases, nation-states have the power to deny admissions

and exclude refugees as non-citizens in extraterritorial spaces within or outside their national ground. The discourse on pro-closure is dominated by arguments on the protection of national values, finances, and the absence of responsibility for the impact of conflict.

A brief overview of the legislative and philosophical framework of forced displacement highlights the alignment of the initial EU response to the humanitarian refugee crisis with international law and pro-admission arguments. At the same time, it makes visible that international law on the protection of refugees prioritises state power or contains gaps that allow for the override of those rights. The elastic nature of international law leaves space for the voluntary implementation of refugee protection according to the moral obligation that each nation assigns itself towards refugees.

The EMR operations as a humanitarian corridor

The countries that fall within the EMR responded to the new role of the corridor by shifting the scope, infrastructure, and programme of border passages. These countries' individual decisions materialised in a new spatial arrangement for the forcefully displaced on the European mainland. [Fig. 2, 3] The transformation was fast and not coordinated. Images of migrants and refugees marching along the corridor under police supervision and the obstruction of border passages raised questions about the operations of the EMR as a humanitarian corridor to safe ground and the application of international law to the protection of the forcefully displaced.

As an organisational scheme for asylum-seeking processes, the EMR consists of a sequence of access points towards possible host countries. The majority of EMR countries equipped border passages with infrastructure for the registration of displaced people either for the continuation of the journey towards the next host country or for the filing of an asylum application within the same country. The determination of both is contingent on a personal interview that includes biometrics and a background check. If the interview is successful, the refugee receives a temporary pass, usually seventy-two hours, granting legal stay within the country, either while traveling to the assigned point of exit to the next EMR country or an asylum application point. The registration centre is run by national bodies of control in collaboration with the ministry of the interior. The registration centre's essence materialises in the ample space between temporary structures for the organisation in queues. [Fig. 5] It is common for people to wait up to a week for an interview. Sometimes the application of border controls leads to even longer waiting periods. Transit camps are tent settlements, usually within walking distance of the registration centre, that provide temporary accommodation for displaced populations during that period. Occasionally found along the route, transit camps are employed by EMR countries to regulate the flow and facilitate the population's bottlenecks resulting from the different border management policies of the proceeding countries. [Fig. 6] The administration of the transit camp is made up of a combination of international humanitarian organisations, local NGOs and governmental agencies. After the refugee reaches her destination she will file an asylum application. It is common that host governments accommodate asylum seekers in conditions of confinement. The mapping of these data indicate that all EMR countries but Serbia accommodated, at least partly, involuntary immigrants in detention centres. [Fig. 4] Germany and Greece have accommodated some asylum seekers in prisons.[27] After receiving a positive first instance asylum decision, the refugee can finally exit the EMR system. The second and final decision of granting asylum will determine the legal stay of migrants and refugees to the country. In total, the EMR is a linear, branched and non-fixed transit system that connects passages, regulates

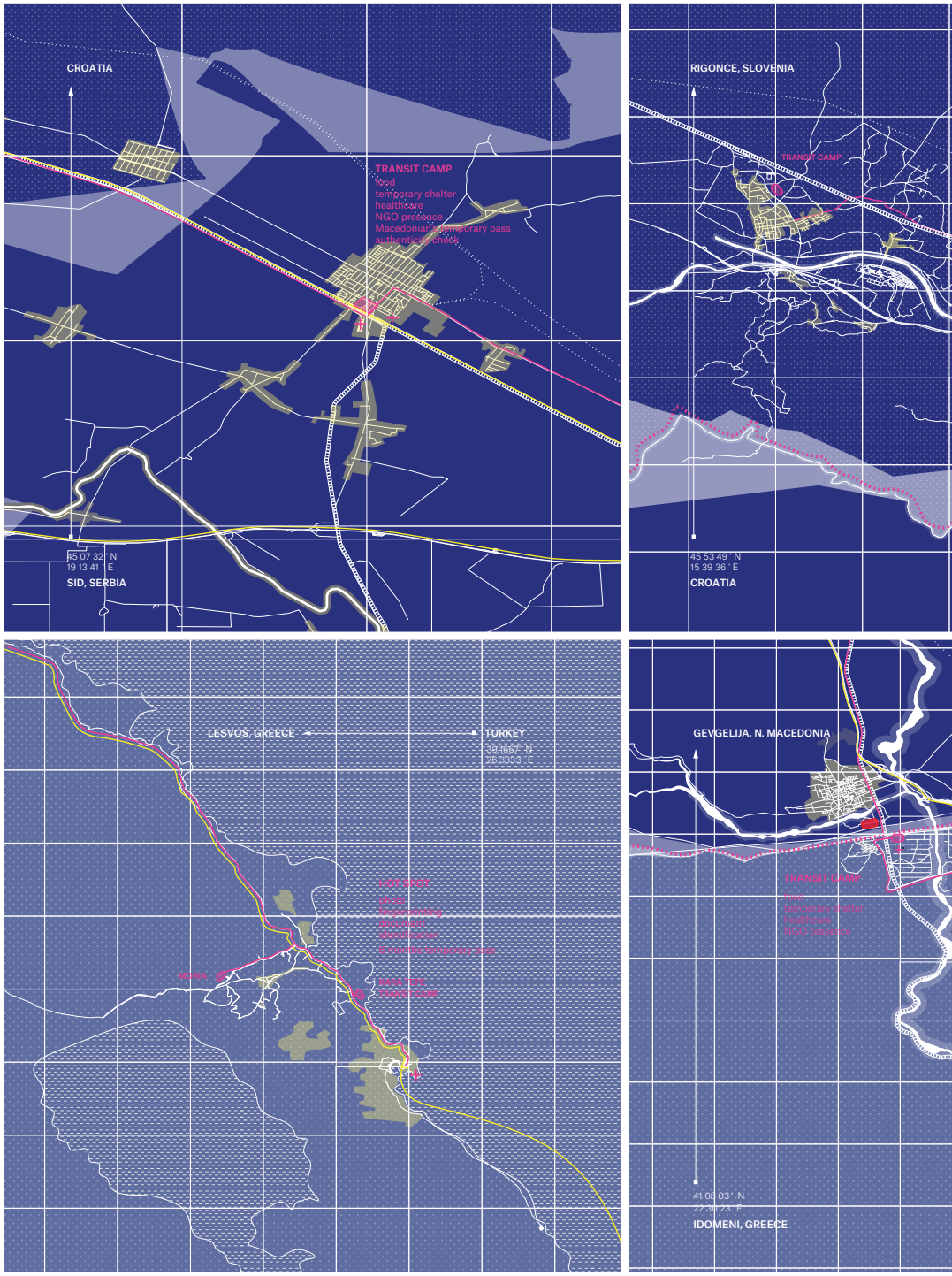
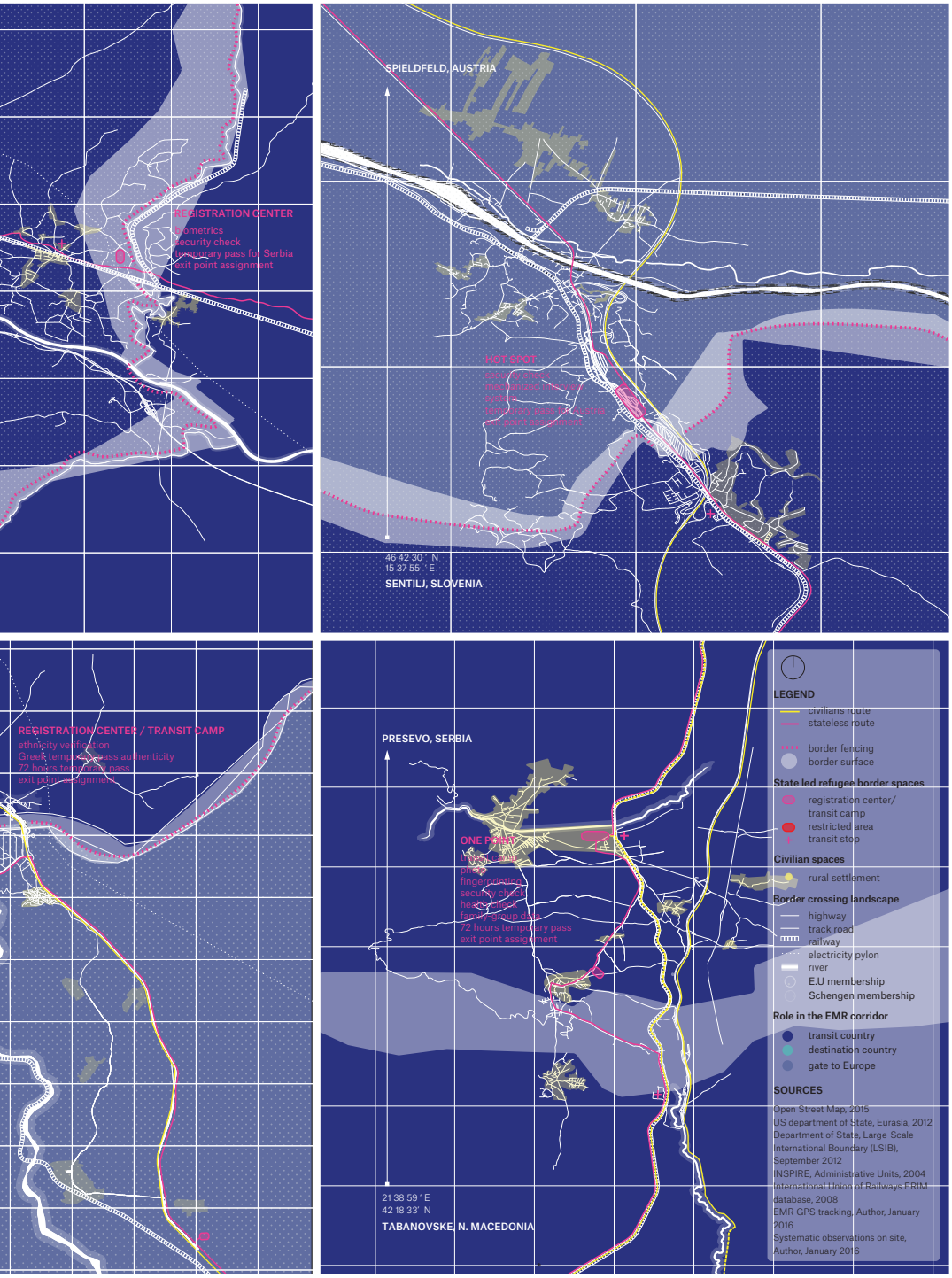


Fig. 3: EMR, border passages (from left to right: a. Serbia-Croatia; b. Croatia-Slovenia; c. Slovenia-Austria; d. Turkey-Greece; e. Greece-North Macedonia; f. North Macedonia-Serbia). Source: Author.


REGISTRATION CENTER
biometrics
security check
temporary pass for Serbia
exit point assignment
SPIELDFELD, AUSTRIA
HOT SPOT
security check
international transport
visible
temporary pass for Austria
exit point assignment
46 42 30 ' N
15 37 55 ' E
SENTILJ, SLOVENIA
REGISTRATION CENTER / TRANSIT CAMP
ethnicity verification
Greek temporary pass authenticity
72 hours temporary pass
exit point assignment
PRESEVO, SERBIA
ONE POINT
biometrics
photo
fingerprinting
security check
health check
transit stop
72 hours temporary pass
exit point assignment
21 38 59 ' E
42 18 33' N
TABANOVSKE, N. MACEDONIA
LEGEND
civilians route
stateless route
border fencing
border surface
State led refugee border spaces
registration center/
transit camp
restricted area
transit stop
Civilian spaces
rural settlement
Border crossing landscape
highway
track road
railway
electricity pylon
river
E.U membership
Schengen membership
Role in the EMR corridor
transit country
destination country
gate to Europe
SOURCES
Open Street Map, 2015
US department of State, Eurasia, 2012
Department of State, Large-Scale
International Boundary (LSIB),
September 2012
INSPIRE, Administrative Units, 2004
International Union of Railways-ERIM
database, 2008
EMR GPS tracking, Author, January
2016
Systematic observations on site,
Author, January 2016

flows of people, and temporarily accommodates the population on the move.

The following segments make visible the mostly undocumented transformation of the territory of the EMR from Greece to Germany from October 2015 to March 2016, and bring forth its properties as a new political space by tracing the tensions between space, sovereignty and law. My characterisation of the EMR draws from systematic observations of the mapping of individual border passages and the synthetic visualisation of the perilous journey to seek asylum. [Fig. 2, 3]

The segregation of refugees from the local population

An overview of the EMR geography reveals that refugee infrastructure is mostly adjacent to the periphery's border settlements. The precise routes and stops of the passages make visible the consistent separation of EMR spaces from the local communities. When migrants and refugees travel by rail, it is on exclusively assigned trains, often late at night, as in the case of Austria.[28] When it is by bus, the driver follows tertiary streets and unpaved roads to access the remote border passage assigned to migrants and refugees. A characteristic example is that of the Greek-North Macedonian border. While the civilian border crossing is along the highway and accompanied by commercial activities, the border passage for the displaced is in the middle of a field a few kilometres away. [Fig. 6b]

The anachronisms of refugee infrastructure

The EMR geography and infrastructure determine the first experience of Europe that migrants and refugees have. Asylum seekers travel through rural villages and the post-industrial landscape of the Balkan periphery in outmoded means of transportation, like the decrepit northbound train from Macedonia to Serbia. [Fig. 7c] They stay in the deserted train station of Gevgelija, a remote national park in Styria, and numerous tent villages with no sewage or electricity networks. [Fig. 6] The anachronisms of refugee infrastructure are symptomatic of the significant geographic, cultural, and socioeconomic distance between the Europe of the EMR and the urban centres where decision-making occurs.

The obstruction of access to safe ground

The described organisational scheme of the EMR is often disrupted and mutated by the participating countries' individual border management decisions. The politics of sovereignty have a distinctively material nature. Despite the formalisation of the route as a corridor to safe ground, some EU members of the EMR have reconstituted their borders. [Fig. 8] Hungary was the first country to completely fence off its borders to migrants and refugees as early as September 2015, diverting the route to Slovenia. Croatia, Macedonia, and Austria followed soon after with the fencing off of their borders. Finally, Macedonia completely closed its border, signalling the closure of the EMR in March of 2016.[29]

Beyond fencing, EMR governments applied a variety of border controls. Temporary measures include the disruption of entries. After the unprecedented inflow of refugees in Germany, the country closed its border three times within the short life of the corridor.[30] [Fig. 4] Austria applied numerical quotas. In February 2016, the Interior Minister announced the restriction of asylum applications to eighty per day.[31] Other border control measures were anchored around the asylum seeker's nationality. At the end of November 2015, Slovenia tried to return more than a hundred Moroccans to Croatia, prompting the beginning of restrictions of entry to anyone not of Syrian, Afghan or Iraqi nationality. Days later, Macedonia, Serbia, and Croatia applied similar nationality-based restrictions. Both the UN and Amnesty International condemned nationality-based border controls as discrimination against individuals and a violation of the human right to seek asylum.[32] Within the corridor's eight-month

existence, there were twelve incidents of border controls. [Fig. 4] An overview of the variations and number of border control incidents reveals the continuous hampering of the process of reaching safe ground.

An extraterritorial space of exception

The EMR territory does not follow the legal order of the rest of the European mainland. It appears as an extraterritorial space of legal arbitrariness that favours sovereign decisions over regional and international agreements on migration and refugeehood. The case of North Macedonia perfectly exemplifies this, as it declared a state of emergency to reinforce its borders and reaffirm its sovereignty. By using a state of emergency, the country suspended its obligations to abide by constitutional and international law – including both the right to seek asylum and freedom of movement – with the support of the army at the end of August 2015.[33] Border controls bar displaced populations from access to admission processes and, as such, violate the Universal Declaration of Human Rights related to the right to seek asylum. Additionally, border controls render the suspension of the Dublin agreement announced by the German government ineffective, since the intermission indented to allow the displaced to seek asylum in the EU, regardless of the point of entry in the Union. Lastly, the temporary reconstituting of borders by Germany, Slovenia, Austria, and Croatia violate the Schengen agreement.[34]

Gate, transit and destination countries

The reaction of North Macedonia is contextualised through its role in the route. A focus on the relationship among Schengen membership and border infrastructure highlights the discontinuation of the Schengen area in the European mainland as a determining factor in Balkan countries' responsibilities. Greece, as the first gate-to-Schengen territory, plays a significant role in controlling the migratory flow from the Middle East to Europe. North Macedonia, Serbia, and Croatia primarily serve the transportation of displaced populations to the EU. Their role as transit countries is evident in low asylum applications and even lower first-instance decisions during the autumn of 2015 that aggregate to less than fifty in total.[35] This becomes even more apparent with a closer examination of Croatia's border infrastructure: the country did not maintain migrant and refugee facilities on either of its borders with Serbia or Slovenia, flagging its role as exclusively a corridor to the neighbouring country. [Fig. 3a, 3b] Slovenia is the first Schengen country of the Balkans. Accordingly, one would assume it holds the infrastructural role of the second gate to the European Union. A closer look at the Slovenian-Austrian border reveals otherwise. [Fig. 3c] The presence of a hotspot at the Austrian border, part of the EU's immediate action to assist frontline member states, helps us to understand the country's geopolitical role in regulating the flow of migrants and refugees. It makes visible that the EU transfers the responsibility of a Balkan gate to Europe from Slovenia to Austria. Lastly, the high number of asylum applications and positive first-instance asylum decisions in Germany shows its character as a destination country for refugees. Specifically, Germany received the highest number of asylum applications in the EMR and granted the highest percentage of positive first-instance asylum decisions in the EU (approximately 50 per cent).[36]

The contingency of border politics

The push-pull effects of border politics have had a disproportional impact on North Macedonia. A closer look at the relationship between the identified EMR typologies and the dates of border control incidents makes visible the chain reaction of a national territory border management approach on other countries. [Fig. 4] Indeed, the border decisions of Slovenia and Austria have an immediate impact on North Macedonia. That is because backlogs at the Balkan border with Western Europe result in attempts by involuntary immigrants to return at the previously available Schengen state,

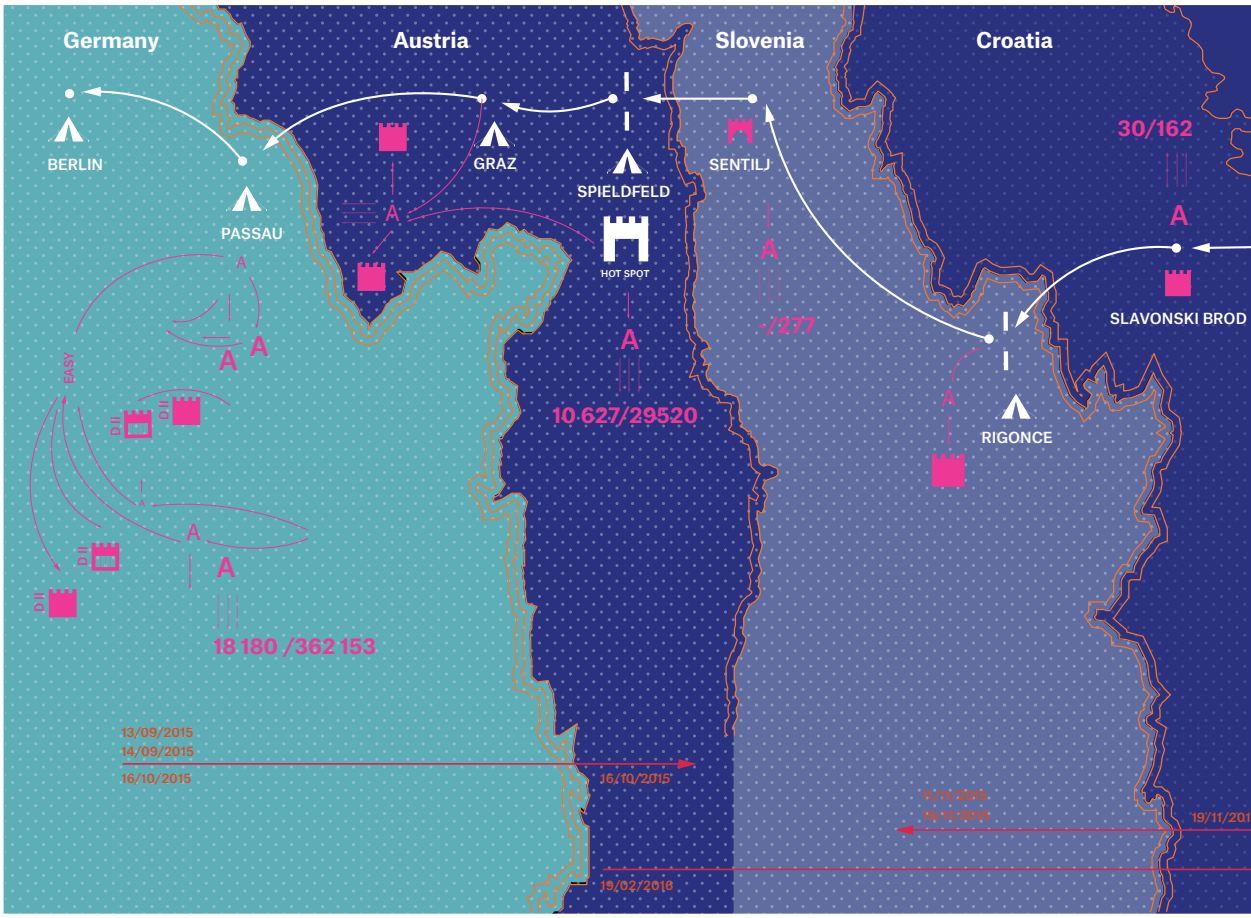
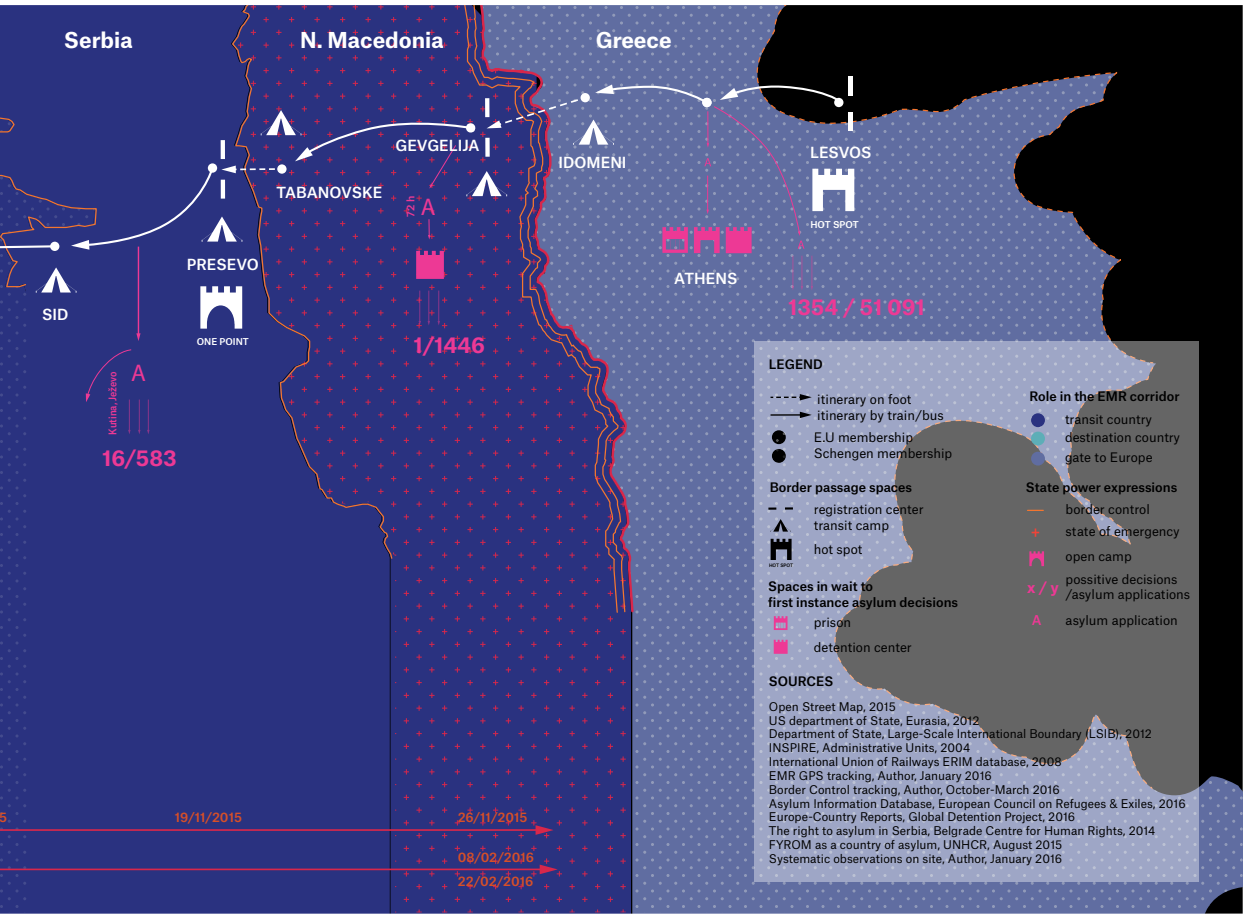


Fig. 4: EMR, spatial trajectories to seek asylum. Source: Author.


Serbia
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LEGEND
itinerary on foot
itinerary by train/bus
E.U membership
Schengen membership
Role in the EMR corridor
transit country
destination country
gate to Europe
Border passage spaces
registration center
transit camp
hot spot
State power expressions
border control
state of emergency
open camp
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A
asylum application
Spaces in wait to first instance asylum decisions
prison
detention center
SOURCES
Open Street Map, 2015
US department of State, Eurasia, 2012
Department of State, Large-Scale International Boundary (LSIB), 2012
INSPIRE, Administrative Units, 2004
International Union of Railways ERIM database, 2008
EMR GPS tracking, Author, January 2016
Border Control tracking, Author, October-March 2016
Asylum Information Database, European Council on Refugees & Exiles, 2016
Europe-Country Reports, Global Detention Project, 2016
The right to asylum in Serbia, Belgrade Centre for Human Rights, 2014
FYROM as a country of asylum, UNHCR, August 2015
Systematic observations on site, Author, January 2016

Greece. The contingency of the border politics of North Macedonia to Slovenia and Croatia manifests evidently in the presence of the military police of the second at its border passage to Greece.[37] Such knock-on effects among EMR countries related to border controls are common and characterise the operation of the corridor. Another pair is that of Germany and Austria. When Germany announced the temporary closing of its border in mid-October, Austria undertook similar measures on the same day.

The reactionary governance of an improvisational infrastructure

The contingency of the border politics of the EMR shows the reactive operation of the corridor. Although all states together take part in the provision of a humanitarian corridor to safe ground, they have antagonistic rather than cooperative relations. One can interpret sovereign decisions in the corridor as an interplay of displacing responsibilities for refugee protection through variations of controlled exclusion. In the absence of clear leadership, the governance of the route is improvised and distributed among affected countries.[38] Without a broad EMR coordination mechanism and within a state of exception that foregrounded different forms of extra-legality, individual countries initiated disruptions to the corridor, neglecting spillover effects on involuntary immigrants and neighbouring countries. Looking at the EMR through the lens of sovereign decisions casts light on its improvisational character, and aids in questioning its objective. The route appears as an improvisational infrastructure under the distributed governance of the EMR countries for the control of migratory flows.

The operational principles of the EMR are far from the initial scenario of a humanitarian corridor to safe ground. Governments of the constituent countries raised fences, subjected populations on the move to border controls, accommodated vulnerable communities in spaces of confinement and assigned the supervision of the process to bodies of control. The EMR is the improvisational infrastructure emerging in the push-pull border politics of the reactionary governance among the EMR countries. It is an anachronistic extraterritorial space that segregates the population on the move from local communities and hampers access to seeking asylum though multiple controlled exclusion strategies.

A new political space for the control of the displaced population

As a physical space, the EMR was the materialisation of a series of legal exceptions: the re-introduction of borders that violate the Schengen agreement, border controls contravening international agreements on the protection of refugees, and the state of emergency that legitimises the override of the legal order. In conjunction with Agamben's investigations into space, law, and sovereignty, the EMR appears as a new type of camp, the spatial institution of the state of exception where the suspension of the legal order becomes a new normal:

> The camp inaugurates a new juridico-political paradigm in which the norm becomes indistinguishable from the exception … It is this structure of the camp that we must learn to recognise in all its metamorphoses into the zones d'attentes of our airports and certain outskirts of our cities.[39]

Similarly to the camp structure, the EMR is an exceptional expanded territory on the European continent where the law as we know it does not apply. It is an extraterritorial space where the condition of exception materialises in space. Unlike the camp's spatiality of enclosure, the EMR emerges as a new metamorphosis of the camp structure, an adaptation to the European paradigm of sovereignty during the humanitarian refugee crisis of 2016.

Gilles Deleuze's investigation of power and organisational schemes offers a useful analytical framework to understand the political and spatial

Fig. 5a

Fig. 5b

Fig. 5c

Fig. 5d

Fig. 5e

Fig. 5f

Fig. 6a

Fig. 6b

Fig. 6c

Fig. 6d

Fig. 6e

Fig. 6f

Fig. 5: EMR, Registration centers (a. Moria hot spot entryway, Lesvos island, Greece; b. Restricted perimeter around the registration center, Gevgelija, North Macedonia; c. View from the border, Rigonce, Slovenia; d. Queue barriers for crowd control, Rigonce, Slovenia; e. Hot spot under construction, Spielfeld, Austria; f. Containers for registration interviews, Spielfeld, Austria). Source: Author.

Fig. 6: EMR, Transit camps (from left to right: a. Kara Tepe, Lesvos island; Greece; b. Gas station employed as a transit camp on the way to Idomeni, Greece; c. Train Station, Gevgelija, North Macedonia; d. Preševo, Serbia; e. Parc outside the city, Graz, Austria). Source: Author.

dimensions of the transition from the camp-as-enclosure to the camp as enclavic network.[40] Deleuze suggests that the arrangement of the terrain in enclosures is a characteristic of disciplinary societies and does not apply to the western world any more. Instead, he argues that enclosures are supplemented by controls that are continuous, fluid, and modulated. Previously, we observed the variations of border controls that continuously mutated the corridor's operations. As an improvisational infrastructure led by the distributed governance of states with antagonistic interests the EMR emerges as a fluid system of legal arbitrariness. Sovereign decisions of individual countries could, at any given moment, take away any form of rule or right. The resulting topology emulates the organisational scheme of the society of control: 'a self-deforming cast that will continuously change from one moment to another, or like a sieve whose mesh will transmute from point to point'.[41]

The regulative instrument of the EMR as the new camp is not the boundary of a confined space but control over the points of access and flows of the European Union. Temporary disruptions of entry, numerical quotas, and nationality-based restrictions are a few of the ways the access to host countries is regulated. The control of flows is regulated with the temporary accommodation of people in transit camps within the route. Lastly, the control of exit from the territory follows the new judicial mode of postponement that supplements the 'apparent acquittal of the disciplinary societies'.[42] Migrants and refugees pass through a sequence of registrations and security checks. At any given moment, an involuntary immigrant is aware of the next step on the route but never the complete pathway to seeking asylum, symptomatic of the operation of registration centres and the dynamic transformation of the route. Upon arrival in the destination country and after the filing of an asylum application, the asylum seeker still stays in refugee infrastructure. About 12 per cent of asylum seekers received a favourable first-instance decision that allows to exit the corridor system.[43] Of that percentage, even fewer were granted asylum. The rest either return to the first country of entry and re-apply for asylum or are sent to a third country. Through the lens of the society of control, the EMR appears as a postponement mechanism. It succeeded in delaying the legal responsibilities of the EU towards the forcefully displaced until a formal externalisation agreement took place. Indeed, in March 2016, the EU-Turkey agreement displaced the responsibilities and spill-over effects of migration flow to Turkey.[44] The EMR is a hybrid camp; a parallel world carefully woven in the periphery of the European mainland, offering the illusion of the possibility for inclusion.

Conclusions

The cartographic investigations in this article identify the EMR as a new transnational territory of exception with its own set of rules. This space is not a humanitarian corridor towards seeking asylum as the EU's initial gestures implied. Instead, it emerges as a new transformation of the camp structure tied to the sovereignty paradigm of the society of control.

Berlin's initial call to suspend the Dublin agreement and acknowledge the EMR would allow the forcefully displaced to seek asylum on European ground regardless of the point of entry. The decision was in agreement with both the Universal Declaration of Human Rights and the Convention Relating to the Status of Refugees. The formalisation of the route demonstrated an intention to prioritise asylum over the predominant refugee policies of encampment and externalisation, revealing an affinity to pro-admission positions. The mapping of the legal and ethical framework of refugee policy made visible that in the context of forced displacement, state sovereignty is prioritised over the moral obligation to refugees, meaning that individual states could potentially hamper the journey to safe ground. [Fig. 2]

Fig. 7a

Fig. 7b

Fig. 7c

Fig. 7d

Fig. 7e

Fig. 7f

Fig. 8a

Fig. 8b

Fig. 8c

Fig. 7: EMR, Means of transportation (from left to right: a. Bus at Lesvos, Greece; b. Bus queue at Miratovac, Serbia; c. Discrebit train at Preševo, Serbia; d. Bus arrival at the Šid, Serbia; e. Train departure at Šid, Serbia; f. Bus queue at Rigonce, Slovenia). Source: Author.

Fig. 8: EMR, Borders (a. North Macedonia-Greece; b. Hungary-Serbia, c. Slovenia-Croatia). Source: Author.

Cartographic observations made explicit the multiplicity of strategies that constituent countries employ for the controlled exclusion of refugees. Border fortification, disruption of entry and temporary confinement are some of the measures that violated international and European agreements. EMR countries contributed to the corridor's distributed governance according to the moral obligation that each assigned itself. During its existence as a humanitarian corridor, the EMR was under continuous transformation over the push-pull effects of individual border strategies. The EMR materialised spatially as an improvisational infrastructure that emerged through the elastic nature of international law: the absence of institutional mechanisms to enforce agreements and the prioritisation of state power over ethical responsibility.

As a catalyst for the suspension of the legal order and in conjunction with Agamben's definition, the EMR appears as a new camp type. In this case, the camp's organisational structure moves from the paradigm of enclosures representative of the society of discipline to a metamorphosis symptomatic of the logic of the society of control: from the camp-as-enclosure to the camp as fluid enclavic network. The spatial arrangement of the EMR as the fluid enclavic network of a transnational entity becomes explicit in the synthetic diagram of the route. [Fig. 4] The EMR territory is visualised as a corridor that branches broadly towards asylum-seeking processes towards the European mainland but with a very selective exit process and multiple barriers along the way that ensure the postponement of asylum and are contingent on the fluidity of reactionary politics. The diagram reveals the regulative instrument of the EMR: the control over the points of access and flow of refugees. Complementary to the diagram, the series of border passage maps shows at a glance that this entity was exclusively dedicated to non-citizens and though woven along the European periphery, it remained separate. [Fig. 3] As such it defines the enclave character of the network: a parallel world that operated simultaneously and in geographic proximity to, but socially and economically segregated from Europe. The EMR appears as the new political space of exception, encampment, and control. It is neither a humanitarian corridor to safe ground nor a camp as we know it. In conjunction with Agamben's investigations of the relationship between sovereignty, state of emergency, and space, and Deleuze's contributions on the transformation of power and organisation in space, the significance of the EMR as a metamorphosis of the camp following the modulations of the society of control becomes apparent. Accordingly, the EMR offers a rare glimpse of a new variation of the camp's political space, the fluid enclavic network.

Notes

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1. Angela Merkel announced 'The fundamental right to asylum for the politically persecuted knows no upper limit; that also goes for refugees who come to us from the hell of a civil war'. 'Four EU States Refuse Migrant Quotas Amid "Biggest Challenge" in Union's History', Deutsche Welle, 11 September 2015, https://p.dw.com.
2. The Dublin Regulation III is the EU legislation related to admissions. 'Regulation (EU) No 604/2013', *Official Journal of the European Unio*n, L180/31 (2013).
3. The EU founded Frontex at the end of the Schengen treaty transitional phase in 2014. Its primary role is to assist the member states in managing their external borders from air, sea, and land.
4. Frontex Risk Analysis Unit, *Frontex Risk Analysis Quarterly,* Q4–2015 (Warsaw: OPOCE, 2016), 8.
5. Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998).
6. The record level of irregular migration from Turkey to the Aegean Islands during the summer months of

2015 was followed another 45 per cent increase of entries during October. Frontex Risk Analysis Unit, *Frontex Risk Analysis Quarterly, Q1–2016*, (Warsaw: OPOCE, 2016), 7.

7. UNHCR, *UNHCR Greece Factsheet (1 January – 31 May 2016),* 2016, https://data2.unhcr.org.
8. Giorgio Agamben, 'What is an Apparatus?' in *What is an Apparatus? And Other Essays* (Stanford: Stanford University Press, 2009), 14.
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10. *The Left-to-Die Boat,* Forensic Architecture, accessed 8 July 2020, https://forensic-architecture.org.
11. 'Mapping Conflict with Teddy Cruz and Fonna Forman', *Master of International Cooperation Sustainable Emergency Architecture* (blog), 20 December 2016, http://masteremergencyarchitecture.com.
12. 'Hackitectura: Critical Cartography of Gibraltar', *AntiAtlas of Borders* (blog), 14 August 2013, https://antiatlas.net.
13. Eyal Weizman and Laura Kurgan, *The New Cartography*, conversation at Apexart, New York, 18 September 2014, https://apexart.org.
14. George E. Marcus, 'Ethnography In/of the World System: The Emergence of Multi-Sited Ethnography', *Annual Review of Anthropology* 24 (1995): 95–117, http://jstor.org.
15. For example, the European Asylum Support Office (EASO), Frontex, Europol, Eurojust, and the Greek authorities established their collaboration on the registration of migrants and refugees only in October 2015. That was three months after the unprecedented acceleration of irregular migration from Turkey to the Aegean Islands. Frontex Risk Analysis Unit, *Frontex Risk Analysis Quarterly,* Q4–2015, 7.
16. I refer here primarily to the basis of refugee protection according to Roman Boed, 'The State of the Right of Asylum in International Law'*, Duke Journal of Comparative International Law* 5 (1994): 1–34.
17. Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, trans. Daniel Heller-Roazen (Stanford, Calif: Stanford University Press, 1998).
18. 'Regulation (EU)No 604/2013', *Official Journal of the European Union*, L180/31 (2013).
19. 'If Europe fails on the question of refugees, it will not be the Europe we wished for'. Angela Markel quoted in İlke Toygür and Bianca Benvenuti*, The European Response to the Refugee Crisis: Angela Merkel on the Move* (Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2016), 1.
20. Frontex, 'Eastern Mediterranean Route', accessed 5 July 2020, https://frontex.europa.eu.
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22. Ibid., 86.
23. Agamben, *Homo Sacer*.
24. Seyla Benhabib, *The Rights of Others: Aliens, Residents, and Citizens* (Cambridge and New York: Cambridge University Press, 2004).
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27. Information related to immigration detentions draws from observations on site, first-hand testimonials and the annual reports of the Global Detention Project, both accessed 5 July 2020: 'Germany Immigration Detention Profile', https://globaldetentionproject.org; 'Greece Immigration Detention Profile', https://globaldetentionproject.org.
28. Train of Hope Volunteer, Ashley Wingler, conversation with the author, January 2016.
29. 'Migrant Crisis: Macedonia Shuts Balkans Route', *BBC News*, 9 March 2016, https://bbc.com.
30. Information on border controls draws from the systematic observation of the daily press from October 2015–March 2016.
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33. Aleksandar Dimishkovski, 'Macedonian Police Clash With Migrants on Border With Greece', *The New York Times*, 21 August 2015, https://nytimes.com.
34. Croatia is an EU member but not part of the Schengen area. That said, the country had expressed Schengen ambitions.
35. According to country reports by the Asylum Information Database and UNHCR regarding 2015, North Macedonia granted positive first-instance decisions for one person, Serbia for sixteen people, and Croatia for thirty people. Asylum Information Database, *AIDA Reports,* accessed 29 January 2020, https://asylumineurope.org; UNHCR, 'The Former Yugoslav Republic of Macedonia as a Country of Asylum', August 2015, https://refworld.org.
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43. The number refers to the sum of positive first-instance asylum decisions of all EMR countries in 2015 over the total of their asylum applications based on the Asylum Information Database Reports noted in Figure 3. Asylum Information Database, *AIDA Reports*, accessed 7 July 2020, https://asylumineurope.org
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Biography

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One Map, Multiple Legends: Exposing Military Spatial Narratives in the Israeli Desert

Noa Roei

> The territory no longer precedes the map, nor does it survive it. It is nevertheless the map that precedes the territory – precession of simulacra – that engenders the territory, and if one must return to the fable, today it is the territory whose shreds slowly rot across the extent of the map.
> (Baudrillard, 1994)[1]

> I question whether there are objects in the landscape that just anyone can see.
> (Bier, 2017)[2]

In *Simulacra and Simulation,* his seminal work from the early 1980s, Jean Baudrillard proposes that contemporary society structures its lived experience in relation to symbols and signs, and not in relation to reality.[3] He opens the work with a reference to a short story by Argentinian writer Jorge Luis Borges about a map created by cartographers of an unnamed empire on a scale of 1:1, so exact that it covers the entire territory.[4] In Borges's story, the map disintegrates after the fall of the empire, and only remnants of it can be found in the desert. Baudrillard returns to the fable to claim that rather, 'the territory no longer precedes the map, nor does it survive it'.[5] Unlike representation, simulacra both precede and engender their referents, so that the real is what withers and rots at the edges, or deserts, of lived experience.

Amir Yatziv's thirteen-minute single-channel video work *Detroit* (2009) also deliberates on maps, deserts, simulations and ways of seeing and experiencing space.[6] The work takes its cue from Baudrillard in its focus on a map and a territory that were conceived in tandem, exposing in their dual existence a very specific, and distorted, military spatial imaginary.[7] Within the short span of thirteen minutes, *Detroit* presents to its viewers snippets of interviews with four urban planners and one mosque architect that all try to make sense of architectural plans of an unidentified Arab village. The planners – two women and three men, three Palestinians and two Israelis – are not sure how to decipher the plans; something doesn't add up. The indicated space does not match any place known to the interviewees, all experts in their field. The interview snippets are cut by close-up shots of the plans, as well as by slow, long shots of the indicated territory, accompanied by screeching, sci-fi sounds that clash with the interviews' documentary form. In these moments, viewers are brought in on the secret: these are construction plans of a military urban warfare training centre in the Negev desert, itself a 1:1 simulation of a Palestinian city – simulation in Baudrillard's sense, without origin or reality, since that original city does not exist. The video focuses mostly on the plans' illegibility and on their inherent inconsistencies to suggest that, regardless of the work put into recreating an authentic spatial experience for the training soldier, the result remains to a large extent a military fantasy, and does not make sense to civilian eyes.

In this article, I offer a detailed analysis of *Detroit*, in order to tease out its critique of the blurred

boundaries between civilian and military ways of experiencing and mediating space in the context of Israeli political geography. Taking *Detroit* as a point of departure, I will present a number of works of art that address the phenomenon of 'spatial militarism' in Israel in which a military-inflected construction of space yields material and cognitive consequences, naturalising the military's status as the guiding principle of daily life.[8] As I will show, within a growing body of works of art that investigate the 'shadow world urban system' that makes up military urban training centres around the world, Yatziv's work stands out as it turns the investigative focus away from the space itself, and towards its mediation.[9] This shift in focus is highly productive for critical anti-military visual projects in its insistence on the fact that, even in a world that is structured according to the logic of the simulacrum, spaces cannot be comprehended separately from the particularities of the lives that shape them into being.

Applying Baudrillard's concept of the simulacrum and the accompanying mapping allegory to a critical reading of an urban planning document necessitates some explanation. As visual devices, plans and territorial maps belong to contiguous yet distinct academic disciplines (namely, planning and geography) that open up to a separate set of practical and theoretical questions. They differ in terms of their semiotic and temporal logic, and they open up to different discourses and debates. Most importantly for our case, a plan's primary goal has never been the mediation of space as such. Rather, plans are more readily understood as guides for policy or markers of intention.[10] Similarly, the planner's task is primarily a proactive one, 'defining and attempting to achieve a "successful" order of the built environment'.[11] To address the plan as simulacrum, then, seems beside the point, since the plan, by definition, precedes and engenders its referent.

At the same time, as visual forms, spatial plans and territorial maps come together under the rubric of cartography and contain representational elements that come into dialogue with material space, whether present or imagined. Plans can and have been addressed as a specific type of maps, the latter understood in turn as the broad representation of a locality that can take many shapes and forms, including charts, models and plans.[12] Planning documents (as well as three dimensional models, for that matter) can thus be analysed as instances of urban cartography, following conceptual deliberations regarding maps and mapping (as I do below) when the focus is placed on the relation between space and its mediation, as it is in the case of *Detroit*. While in the video, interviewees clearly employ planning sensibilities for their inquiry, the work's main focus remains on the act of cartographical interpretation and on the relations between represented, simulated, and experienced space. It thus lends itself to an inquiry based on the discourse of critical cartography.

The map as legend

The video's probing of the authority of architectural discourse develops as the film progresses, but is present right from the start. The work opens with a seemingly factual statement, 'In 2006 an Arab Town was built with American Support' (00:07). Next, the camera zooms in on a printed text: the term 'legend' takes up a large portion of the screen, written in capital letters, italicised, and followed by colons (00:12). While the camera scrolls down to contextualise the term's primary meaning as index key for the plan that will soon be presented, an alternate meaning for the term 'legend', signifying myth or folklore, lingers, and frames the preceding expression as the beginning of a fairy tale ('once upon a time…'). This connotation is strengthened through statements made in the following scene by mosque architect Mamoun Hassan, the first of the map's five interpreters: 'I don't know if it is in Israel, if it is in Israel I'd be very surprised. I'm telling you I would like to know where it is and I want to change all my plans for the day and go see it, really', he says,

fixing through his sense of wonder the notion of the legend as one of fantasy. [Fig. 1]

The next couple of scenes cut between additional interviews with urban planners that all date the represented space to historical or ancient times (and in so doing, join Hassan's reading of the indicated territory as one that does not belong to the here and now), and close-ups of the plan's labels that conversely disclose it to belong unequivocably to the present, issued for construction in November 2006, and to contemporary powers, mentioning both the Israeli Defense Forces and the US Army Corps of Engineers. Only after this exposition of misinterpretation does the film present itself, fusing the name of the drawing with the title of the film, marking the former's illegibility as the latter's point of departure. The camera zooms out slowly immediately after to offer a full view of the plan, accompanied by high-pitched beeping sounds and quick pulsations that mark the film's second, non-documentary register, and coincide throughout the work with photographs of the built model as well as with the narrator's textual disclosures of the simulated nature of the space.

Critical cartography studies have long answered J. Brian Harley's call to study maps as thick texts, as socially constructed forms of knowledge.[13] Nowadays, rather than as value-free images, maps are often adressed as 'a way of conceiving, articulating, and structuring the human world which is biased towards, promoted by, and exerts influence upon particular sets of social relations'.[14] Plans are no exception; if anything, they flag, rather than hide, the social considerations involved in the organisation of space. In *Detroit*, Yatziv underscores the performative aspect of the map when he mobilises the plan's legend in order to mark the plan-as-legend. In so doing, he foregrounds the map as an allegorical device, 'a fiction, not unlike a story, that employs any number of figural means to imaginatively depict, not the real territory, but an alternative version of it'.[15] But what kind of allegory does his narrative expose?

At first, the allegory focuses (as in many contemporary map-art projects) on the fiction involved in the discipline of cartography as such.[16] All experts are presented as baffled by a cartographic text they cannot read, their attempts to locate the indicated area in time and space, to narrate the space into existence, fail to match reference and referent. Yet as the film progresses, their confusion is given ground. It is based not on their misreading of the plan, but rather on the idiosyncratic character of the signified space itself, and more specifically, on its indifference to the social needs of its residents. 'I don't think that anyone living down there in those small cottages would agree to have people living next door in eight-story buildings' says Hassan (07:09); 'you don't leave that kind of space between houses, because how could you service something like that? … when a garbage truck needs to go that length of a route, it's not financially sound', adds urban planner Dafna Ben Baruch in the subsequent interview excerpt (07:28). 'Where are the recreation spots? People live here but where do they meet for coffee? Where do they sit with their children?' asks urban planner Badria Biromi (08:09). 'The residents there can reach the mosque very easily, but there is no need for a sixteen-and-a-half-metre turret in a settlement of two-stories like this, instead they could have built a dome', continues Hassan (09:19), and urban planner Dr. Rasen Kymaise concludes this imaginary roundtable, orchestrated through cuts and edits: 'the old texture couldn't have developed the way it was built, natural environment, plants, atmosphere, all these things don't fit … they built it as a model but not in actual reality' (10:58). Thus, in the end, the plan functions as a cartographic text in the most traditional sense, allowing one to accurately decode a space. Its status as reliable referent to reality restored, and its framing as allegorical fiction – as fable – moved elsewhere. [Fig. 2]

Note that, as viewers of Yatziv's work, we are not given access to entire interviews, but to the narrative created from editorial choices.[17] That narrative clearly focuses on the lack of social considerations that is raised in the urban planners' queries. Those queries are presented against the backdrop of relevant sections from the plan, and, as the film progresses, also against the backdrop of documentation of the military town's cityscape, and so reinforce the shift of the work's critique away from the map's illegibility and onto the model's inconsistency. It is in this way that the legend of *Detroit*, underscored early on in the video, is given its final connotation – as a piece of military, orientalist lore, an illusory 3D model that employs a number of figural means to depict a version of the territory in which the inhabitants of an Arab town are thought of as flat characters, without context or history, without civilian interests or lived relation to space beyond that of possible combat. It is the legend the military tells about the people that make up the urban space that it depicts.

In this context, the name given to this model shadow city is not without significance. To name a military urban training centre in the Israeli desert after an American city known for its racially charged past and resulting urban decay, is to unabashedly flaunt the global as well as racial aspects of the militarisation of civilian spaces.[18] What is more, American Detroit, the home to several of North America's oldest and largest Middle Easter ethnic communities, was the first to be monitored and targeted in relation to national security threats in the wake of September 11.[19] As Andrew Shryock and others make clear, 'Arab Detroit, as both a place and an idea … is an easy domestic target that presents itself whenever Arabs and Muslims become official (and more difficult) targets overseas'.[20] While the main critique in Yatziv's *Detroit* remains within the prism of Israeli militarised spatial imaginaries, the overall framing of the work clearly points to the collaboration between American and Israeli military industries and colonial enterprises, and uncannily exposes their administrations' desire to discipline, control and investigate their Arab citizens as threats to national security.[21]

Military geographies

The procedure of examining the coalescence of civilian and military comprehension of space, and the related naturalisation of militarised elements in public space, is not uncommon in Israeli art.[22] Examples include works that expose the banality of military spatial presence within civilian public space by focusing on street signs (Meir Gal, *Beit Hanina/ Pisgat Ze'ev*, 1997), memorials (Drora Domini and France Lebee Nadav, *Everywhere: Israeli Landscape with Monument*, 2002), or public bathing beaches in Israel (Efrat Vital, *Quiet Beach*, 2011); as well as works that present deserted military bases and detention facilities (as in the works of Roi Kuper, Gilad Ophir, Gilad Efrat, Yaron Leshem and Shai Kremer) to show how the landscape view both naturalises and conceals civilian-military social relations. Together, this body of works attempts to offer mediations on what social geographer Erez Tzfadia terms spatial militarism: the phenomenon in which a military-inflected construction of space yields material and cognitive consequences for Israeli society and culture, that naturalise the military's status as a central guiding principle of daily civilian life.[23]

Elsewhere I offer a reading of such city- and landscape views within Israeli art as particularly useful for addressing what Rachel Woodward terms 'the geographies of militarism' – that is, the shaping of civilian space and social relations by military objectives, rationales and structures.[24] Tackling this issue through the landscape genre allows viewers to grapple with their failure to understand their civilian surroundings as implicated in military concerns. In what follows I attend to the artistic mediation of a related but separate phenomenon: that of 'military

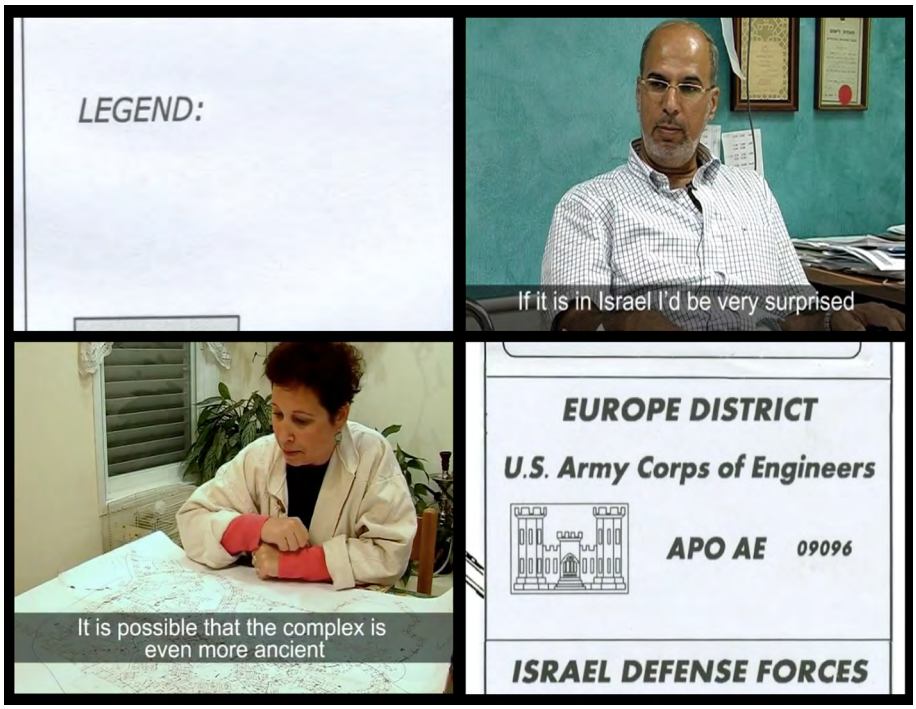

Fig. 1

Fig. 2

Fig. 1: Amir Yatziv, *Detroit*. Screen captures, 00:12, 00:39, 1:38, 1:49. Single channel video, 13 min. Courtesy of the artist.

Fig. 2: Amir Yatziv, *Detroit*. Screen captures, 7:56, 8:11, 10:42, 10:58. Single channel video, 13 min. Courtesy of the artist.

geographies'. Following Woodward, military geographies differ from the geographies of militarism in that they address spaces that are specifically military rather than civilian, shaped by the production and reproduction of military capabilities.[25] Simulated towns for training purposes are a clear case in point for military geographies; what is more, their status as 'image' in Baudrillard's sense of the simulacrum makes them a particularly interesting subject for the visual arts.

In addition to Yatziv's *Detroit* video work, other visual artists have picked up urban training centres as their subject matter. One such work is Yaron Leshem's *The Village* (2004), a single panoramic colour print presenting a scenic view of an unnamed training facility in the north of Israel. [Fig. 3] The rural scenery is offered in high definition and mounted on a light box that allows for close inspection of its details. Those details, in turn, expose the village's forged quality, revealing the windows and doors of the houses to be painted on blocked facades, and the inhabitants to be painted, orientalised cardboard figures.[26] A second case in point is Shai Kremer's photographic series *Infected Landscapes* (2003–2007), which offers a broad range of depictions from current and former military training facilities, including close-ups of architectural details and panoramic overviews of Detroit (as well as the adjacent Chicago facility, located within the same military base).[27] [Fig. 4] The simulacral nature of the represented space is announced in a dry and descriptive form in each of the images' titles, while the images themselves have a dramatic character, verging on sublime aesthetics. As a whole the series is devoid of human figures except for one notable exception: *Urban Warfare Training Centre, Panorama, Tze'elim, Israel* (2007) offers a distant documentation of training units in action, visually marking the disjuncture between possible readings of the Detroit cityscape, as (residential) scenery, and/or as (combatant) scenario.

The project *Chicago* (2006) by the South African duo Adam Broomberg and Oliver Chanarin offers yet another visual impression of Detroit's neighbouring training facility. This photographic series takes a more investigative approach and locates the viewer in front of brightly-lit close-up registrations of architectural structures, street views, cardboard figures and training props.[28] [Fig. 5] The matter-of-fact quality of the imagery and its avoidance of either pastoral aesthetics (as in Leshem's work) or dramatic effects (as in Kremer's composition and play with light and shade), lead Eyal Weizman to describe the project as an exercise in visual semiotics, a 'site specific survey of the artefacts, objects, buildings and landscapes' that make up the Israeli-Palestinian conflict in particular, and the global economy of military conceptual imaginary systems more generally.[29] Within Broomberg and Chanarin's *Chicago*, documented traces of fabricated human activity are dystopian and strictly combat-related, and include bombed-out cars, graffiti (referring to freedom, blood and love), and pop-up cardboard figures featuring stylised terrorists. Stage props that could in principle act as innocuous markers of residential life (a guitar, a watermelon, or a fire extinguisher) function as representations of camouflaged bombs, titled according to a past event in which similar objects were used in practice. Finally, Beate Geissler and Oliver Sann's photographic project *Personal Kill* addresses the global thrust of what Stephen Graham terms a 'shadow urban system' of military mock-towns for training purposes, in their visual investigation of an equivalent training centre in Bavaria, Germany.[30]

Clearly, then, these projects testify to a growing interest in a relatively new form of military spatial imaginary. A comparative analysis of the different ways in which each project mediates this vision to its viewers would be interesting in and of itself. As a group, however, the works of Leshem, Kremer, and Broomberg and Chanarin share the genre of the still image city- or landscape view, as the media

Fig. 3

Fig. 4

Fig. 3: Yaron Leshem. *The Village*, 2004 (detail). Digital chromogenic print laminated on Plexiglas mounted on a light box. Courtesy of the artist.

Fig. 4: Shai Kremer, 'Panorama, Urban Warfare Training Center, Tze'elim, 2007' (detail). From the series *Infected Landscapes*, 2003–2007. Chromogenic print. Courtesy of the artist.

with which they stage their spatial critique. Within the landscape genre, meanings and possible (mis) reading of the scenes are choreographed in relation the camera's singular position and to the spectator's personal viewing experience in front of the image.[31] This can of course be done in a critical way, as is most clear in the case of Leshem's *The Village*, in which the viewer is told (but cannot visually tell) that the panoramic scene is in fact constructed out of more than fifty smaller digital photographs put together. In this way, *The Village* combines a critique of the illusion of transparency related to the medium of photography with a critique of the illusion of the specific scene on view, related to military illusory simulation of space.

A telling exception within this genre is Bashir Makhoul's large-scale installation *Enter Ghost, Exit Ghost* (2012), for which Chicago served as initial inspiration.[32] [Fig. 6] The installation comprises a maze made of large-scale lenticular prints leading to a stack of cardboard boxes that echo the mock city's layout.[33] A lenticular print is a compound image that changes depending on one's viewing angle. It is composed of two digital images that are cut into strips and then interlaced in alternative order.[34] The lenticular prints in Makhoul's maze are composed of photographic documentation of his cardboard model on the one hand, and of semi-deserted streets from various Palestinian cities and refugee camps on the other, creating a disorienting visual experience that culminates in the material cardboard version of Chicago, that 'turns a real village into an achieved battle-space and mocks the real village as a prophecy of the violence that is immanent within its representation'.[35] Rather than employing the landscape view, this work radically denies its spectators a stable vantage point from which to look at the images that surround them, and brings into view the abstracting force of model towns on the spaces that they structure after the fact.[36]

Yatziv's *Detroit* shares the concerns that underlie the projects described above, but differs in terms of angle of approach. It too attempts to grasp, and mediate, the simulacral logic of a specific military topographical infrastructure and the discrepancy that lingers within the 'military dispositifs' that 'blur any point of stability between civilian spheres and those of actual military zones of conflict'.[37] Yet in this work, acts of looking and interpretation are not secondary to the depicted view, to be experienced and reflected upon in relation to it. Instead, acts of looking and interpretation make up the bulk of the work's narrative or storyline: they are what we viewers look at. The scenes that present cityscapes of Detroit are subordinate to the video's central narrative of baffled (mis)interpretation. They are carefully staged to avoid any semblance of transparency, presented together with an alienating soundtrack, and twice removed from lived experience as panning video shots over still imagery. Concomitantly, *Detroit*'s focus on urban planners' ways of seeing, and on their deciphering of space by means of its spatial plan, directs attention away from one's singular, personal experience of (mediated) space, critical as it may be, and towards the dynamics involved in institutional coding and decoding of (urban military) landscapes.

Scripts, plans, and (mis)interpretations: the endurance of lived space

'It's a map or script for people, it is not a contingency plan', Biromi is heard saying close to the end of *Detroit*, against the background of Detroit cottages (12:10). [Fig. 7] To an extent, we have come full circle to the starting point of the video, since the image contradicts the statement made about it, and shows that the plan has been realised. Yet now we carry the knowledge of the past thirteen minutes of footage with us, and read the disjuncture between word an image differently. The script wasn't realised: it has been translated. Existing as a model in three-dimensional form, it remains (de)script(ive):

Fig. 5

Fig. 6

Fig. 5: Shai Kremer, ‘Street, Chicago Ground Force Training Zone, Israel, 2007’. From the series *Infected Landscapes*, 2003–2007. Chromogenic print. Courtesy of the artist.

Fig. 6: Adam Broomberg and Oliver Chanarin, ‘Untitled (Chicago #2)’. From the series *Chicago*, 2006. C-type print. Courtesy of the artists.

an extreme form of heterotopia, pointing to spaces beyond itself.[38]

In its layering of reading and misreading, *Detroit* addresses a double visual bind. Departing from a contemplation of civilian inability to decipher military space, it moves on to deliberate on a military incapacity to comprehend space as created from, and for, civilian affairs. Through this dialogical move, *Detroit* highlights the fact that while the boundaries between military and civilian mediations of space may be extremely blurred, they are not lost just yet. The work mobilises critical cartography's contemporary focus on 'worldly struggles and conflicts between different social interests'[39] to show that, even as maps inscribe power and support dominant political structures, they also include a key for informed counter-readings.[40]

At the same time, and crucially, the film's exposure of Detroit's essence as script or simulacrum only accentuates the repercussions that its inherent distortions (regarding the erasure of civilian concerns) may have on the military's conduct in actual lived space, in Palestine and elsewhere.[41] Baudrillard himself is careful to point out that 'the war is no less atrocious for being only a simulacrum – the flesh suffers just the same, and the dead and former combatants are worth the same as in other wars'.[42] This type of distortion is underscored in the somewhat sarcastic 2004 testimony of Nuha Khoury, a Palestinian resident of the city of Bethlehem, telling of her confrontation with a soldier performing a routine operation while she was carrying out the civilian activity of sipping coffee on her friend's balcony:

> "go inside", he ordered in hysterical broken English. Inside! I am already inside! It took me a few seconds to understand that this young soldier was redefining inside to mean anything that is not visible, to him at least … Not only is he imposing a curfew on me, he is also redefining what is outside and what is inside within my own private sphere.[43]

Khoury's testimony is far from representative of the dire human rights violations that Palestinian civilians endure in the face of a militarised interpretation of their lives and public spaces, including frequent military raids, building restrictions, house demolitions, police brutality, roadblocks and (night) arrests.[44] Trivial as her testimony is, it nevertheless points to the nuanced distortion that lies at the heart of this militarised conception of civilian space, rehearsed in facilities such as Detroit.[45] Such a spillover from the military, colonial map/model (that envisions the entire space as everlasting battle ground) onto the civilian territory of Palestinian lived space underscores the ways in which maps exert their influence, and the need to remain vigilant of 'the desire to participate in the map's deception, to believe its exercise, even while proclaiming the ironic discrepancies of representation'.[46]

Detroit is only one of more than sixty urban warfare training complexes that were built around the world by the US army (or in collaboration with it) between 2005 and 2010.[47] The way in which such spaces feed into a militarised geographical cognitive framework has been addressed by critical theory almost immediately. Stephen Graham, a leading scholar in the field, attends to these spaces as part of an older and larger complex of discourses and representations that lead to an orientalised construction of Arab urban dwellings as military targets.[48] Reinforcing the underlying conclusion of Yatziv's video, he maintains that 'this shadow urban system simulates not the complex cultural, social, or physical realities of real Middle Eastern urbanism, but the imaginative geographies of the military and theme park designers that are brought in to design and construct it'.[49]

Fig. 7

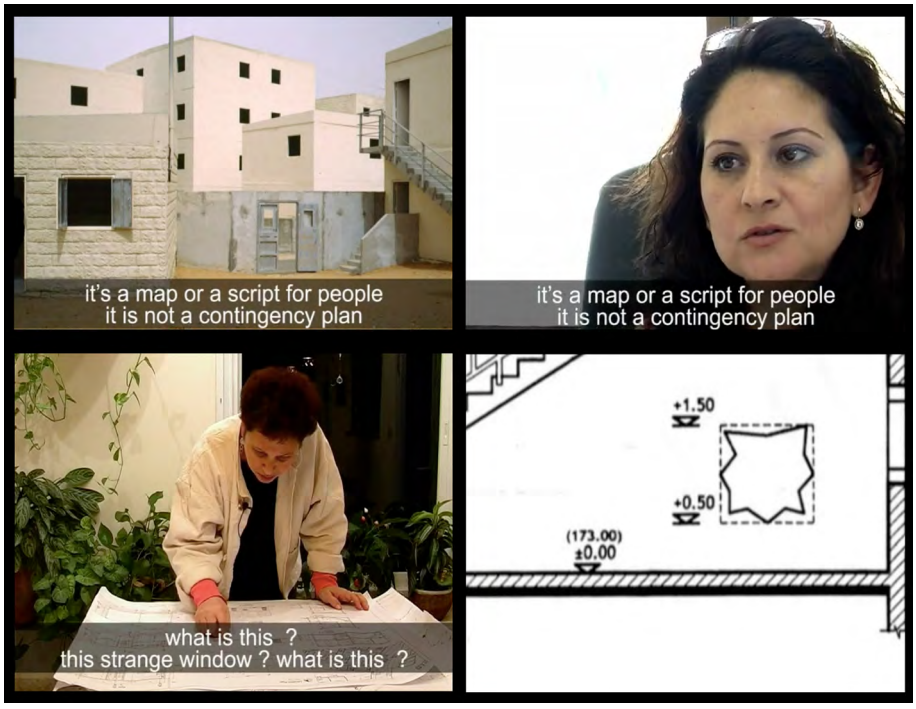

Fig. 8

Fig. 7: Bashir Makhoul, *Enter Ghost, Exit Ghost* installation view (lenticular surface showing boxes and a street scene), Yang Gallery, Beijing, 2012. Courtesy of the artist.

Fig. 8: Amir Yatziv, *Detroit*. Screen captures, 12:09, 12:11, 6:15, 6:21. Single channel video, 13 min. Courtesy of the artist.

An indicative visual cue for the disparate approaches to space that distinguish urban combat training facilities from their real-life counterparts, is a star-shaped mark that is repeatedly present in various shots of the architectural plan in *Detroit*.[50] These marks are the only signs on the map that Ben Shaul cannot decipher: 'What is this? this strange window? what is this?' she asks (6:15). [Fig. 7] The question, left unanswered in the video, is reiterated in cityscape images in Kremer's *Urban Warfare Training Centre, Interior, Tze'elim, Israel* (2007) and Broomberg and Chanarin's *Chicago #5* (2006), that zoom in on similarly designed enigmatic openings in the concrete walls of the facility's edifice.[51] [Fig. 8, 9] As Eyal Weizman's study of contemporary 'operational architecture' makes clear, these pre-cast holes allow soldiers to practice 'walking through walls', a manoeuvre conducted by Israeli military units since 2002 as part of a new strategy of urban combat.[52] During this manoeuvre, the entire urban syntax is reorganised, as soldiers '[use] none of the streets, roads, alleys and courtyards that make up the order of the city, and none of the external doors, internal stairwells and windows that make up the order of the building, but [move] horizontally through party walls, and vertically through holes blasted through ceilings and floors'.[53]

Relevant for our case is the simulacral temporality underscored by the visual discrepancy of the clean-cut, planned and premeditated cavities in the training facility infrastructure on the one hand, and the messily-shaped penetrations, surrounded by clutter, that are the result of actual combat with the use of hammers and explosives on the other. The one cavity is built into the infrastructure, preceding its construction, while the other is supplemental in nature and formed by demolition. Such crude penetrations into the private space are not devoid of casualties, and are experienced by residents as a profound form of trauma and humiliation.[54] Their neatly shaped counterparts in Detroit (both in the plan and in the built model) blatantly disclose an a priori interpretation of the space as designed for destruction. This, in contradiction to other textual codes within Detroit that are meant to produce something akin to Barthes's 'reality effect' by providing a civilian flair, including, for example, a building that is captioned as the New Hope Elementary School on the plan (03:56).[55]

The star-shaped cavity in the wall is one of the more graspable visual elements of the discrepancy between civilian and military mediation of space, and it is for this reason that it features so prominently in Yatziv's short video as well as in comparable artistic projects. Yet, in this case too, exposing the military's mode of deciphering and mediating space is not enough in order to offer an enduring 'countergeography' that would undermine the logic of new military urbanism.[56] On the contrary, the military itself offers exposures of its training facilities to embedded reporters: a Vice report entitled 'War Games: Israeli Urban Warfare' from 2014 has news correspondent Alex Miller join a training session at the Tze'elim facility that includes coverage of the manoeuvre of 'walking through walls' as the latest development in urban warfare tactics. The reportage is created with evident collaboration from the Israeli Defense Forces and makes clear that, from the latter's point of view, both the facility and the trainings it hosts are something to be proud of, a cutting-edge answer to the challenges of contemporary warfare.[57] Similarly, military commanders interviewed by Weizman are proud of their bold and unorthodox architectural approach to the city. One of the interviewees, Aviv Kokhavi, heavily bases his operational approach on contemporary theory and asserts that 'space is only an interpretation' and that 'movement through and across the built fabric of the city reinterprets architectural elements (walls, windows and doors) and thus the city itself'.[58] What

Fig. 9

Fig. 10

Fig. 9: Shai Kremer, ‘Urban Warfare Training Center, Interior, Tze’elim, Israel, 2007’. From the series *Infected Landscapes,* 2003–2007. Chromogenic print. Courtesy of the artist.

Fig. 10: Adam Broomberg and Oliver Chanarin, ‘Untitled (Chicago #5)’. From the series *Chicago*, 2006. C-type print. Courtesy of the artists.

is taken to be a detrimental misinterpretation from the civilian side of things is considered a productive reinterpretation from the other end of the spectrum.

It is here that Yatziv's work stands out in relation to existing (artistic and academic) critical literature on urban military training centres. It does not only bring to light the military spatial visions (and legends) that such simulations imbue, but deciphers those visions as professionally unfounded. In its shift of focus away from the urban planners' perplexity with regard to the cartographic text that they are presented with and towards their informed unpacking of what makes this plan undecipherable to begin with, the very foundations of the mock city of Detroit as one that accurately simulates lived space (even if for purposes of destruction) are shaken. It does not matter that Detroit's architectural inconsistencies could be partly rationalised by the fact that the mock city was constructed, deliberately, as a patchwork of (mostly Palestinian) urban spaces.[59] Places do not exist in isolation, and so none of the segments of Detroit could ever recreate the spatial coordinates of any lived space. If anything, such a patchwork construction is indicative of the flattening of varied cultures, societies, and heritage into a single stereotype of 'Arab-as-enemy', a flattening whose racial and Islamophobic undertones are underscored through the metaphoric link to its American namesake.[60]

In his analysis of the Israeli military's contemporary approach to Palestinian urban fabric, Weizman suggests that the urban environment should be understood

> not simply as the backdrop to conflict, nor as its mere consequence, but as trapped in a complex and dynamic feedback-based relation with the forces operating within it – be they a diverse local population, soldiers, guerrilla, media or humanitarian agents.[61]

Spaces such as Detroit demand that we think of these dynamics as doubly-layered and shadowed, and of the entanglements of urban environments not only with the forces that operate within them, but also with those that sustain a specific image of them, sometimes to the extent of recreating an ideal (dystopian) image to their liking. What Yatziv's *Detroit* adds to the growing body of literature that aims to unpack the logic of urban military spatial imaginaries, in a nuanced, modest way, is a suggestion to 'scale down the rhetoric of the power of images'.[62] Even if the territory does not precede the map, it does survive it and can still be made to critically inform it. The work reiterates an argument that has been spelled out in history time and time again, but that often escapes from view in a world structured by the logic of colonialism and simulacra. That is, that the power of endurance lies not in space as such, but in the particularities of the lives that shape it into being.

Notes

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1. Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila F. Glaser (Michigan: University of Michigan Press, 1994), 1.
2. Jess Bier, *Mapping Israel, Mapping Palestine: How Occupied Landscapes Shape Scientific Knowledge* (Cambridge, MA: MIT Press, 2017), 3.
3. Baudrillard, *Simulacra*, 1–42.

4. Jorge Luis Borges, 'On the Exactitude of Science,' trans. Norman Thomas di Giovanni, in *A Universal History of Infamy* (Harmondsworth: Penguin Books, 1975), 131.
5. Baudrillard, *Simulacra*, 1.
6. The video is available for online viewing on the artist's website at http://amiryatziv.com.
7. I employ the term map here in its broadest sense to denote the representation of a locality that can take different shapes and forms.
8. Erez Tzfadia, 'Militarism and Space in Israel,' *Israeli Sociology* 11, no. 2 (2010): 337–61.
9. Stephen Graham, 'Gaza is Everywhere', in *Bashir Makhoul and Aissa Deebi: Otherwise Occupied*, ed. Ryan Bishop and Gordon Han (Jerusalem and Venice: Palestinian Art Court – Al Hoash, 2013), 141. See also Stephen Graham, 'Remember Fallujah: Demonising Place, Constructing Atrocity', *Environment and Planning D: Society and Space* 23, no. 1 (2005): 7.
10. Peter Hall and Mark Tewdwr-Jones, 'Planning, Planners and Plans', in *Urban and Regional Planning* (New York and London: Routledge, 2011), 1.
11. David Harvey, 'On Planning the Ideology of Planning', in *The Urbanization of Capital* (Baltimore: Johns Hopkins University Press, 1985), 165.
12. David Buisseret, 'Introduction', in *Envisioning the City: Six Studies in Urban Cartography*, ed. David Buisseret (Chicago: The University of Chicago Press, 1998), x, xii. As Buisseret rightly notes, plans as a genre are rarely the object of analytical attention, but when they are, they are attended to in tandem with other types of maps. That is the case, for example, in the multi-volume encyclopaedic series *The History of Cartography,* ed. J. B. Harley and David Woodward (Chicago University Press, 2015–2016), most of which is available online at https://press.uchicago.edu. See also Denis Cosgrove's approach to urban space as cartographic space in 'Carto-City', in *Geography and Vision: Seeing, Imagining and Representing the World,* ed. Denis Cosgrove (London and New York: I.B.Tauris, 2008), 169–82.
13. John B. Harley, 'Maps, Knowledge, and Power', in *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments*, ed. Denis Cosgrove and Stephen Daniels (Cambridge: Cambridge University Press, 1988); Jeremy W. Crampton and John Krygier, 'An Introduction to Critical Cartography', *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2006): 11–33.
14. Harley, 'Maps', 177. For a particularly pertinent study on topographical spatial narratives in the context of Israel and Palestine, see Derek Gregory, *The Colonial Present: Afghanistan, Palestine, Iraq* (Oxford: Wiley-Blackwell, 2004); Bier, *Mapping Israel, Mapping Palestine*.
15. Robert T. Tally, 'In the Deserts of Cartography: Building, Dwelling, Mapping', in *The Map and the Territory*, ed. Shyam Wuppuluri and Francisco A. Doria (New York: Springer, 2018), 606.
16. For studies of map-art in literature and visual arts see for example Christina Ljungberg, 'Constructing New "Realities": The Performative Function of Maps in Contemporary Fiction', in *Representing Realities: Essays on American Literature, Art and Culture*, ed. Beverly Maeder (Tübingen: Gunter Narr Verlag, 2003), 159–74; Denis Wood, 'Map Art', *Cartographic Perspectives* 53 (2006): 5–14; and Tally, 'Deserts,' 599–608.
17. Throughout the span of the video effort is taken to foreground the work's non-documentary status and to flag the manipulative operation at the base of the conducted interviews as well as of the editorial process that followed. In so doing, *Detroit* refuses to presents it critique in opposition to 'false narratives', but rather keeps the viewer on her toes by staging, in an exaggerated manner and through critical 'complicit sensibility', the manipulative aspect residing in all forms of knowledge mediation. For more on critical complicity in the arts, see Johanna Drucker, *Sweet Dreams: Contemporary Art and Complicity* (Chicago: University of Chicago Press, 2005).
18. On this note see for example Henry A. Giroux, 'War on Terror: The Militarising of Public Space and Culture

in the United States', *Third Text* 18, no. 4 (2004): 211–21.

19. Andrew Shryock, Nabeel Abraham and Sally Howell, 'The Terror Decade in Arab Detroit: An Introduction', in *Arab Detroit 9/11: Life in the Terror Decade*, ed. Nabeel Abraham, Sally Howell and Andrew Shryock (Detroit: Wayne State University Press, 2011), 1.
20. Ibid., 5.
21. Ibid., 4.
22. That coalescence is extremely widespread, with only 20 per cent of Israel's land inside the Green Line under no building restrictions due to military considerations. Amiram Oren, 'Shadow Lands: The Use of Land Resources for Security Needs in Israel', *Israel Studies* 12, no. 1 (2007): 149–70.
23. Tzfadia, 'Militarism', 337–61. The perspectives with which Palestinian artists attend to colonial and militarised impacts on local urban and rural fabrics and their spatial narration exceed the scope of this article. Works that specifically attend to (material and representational) achitectures within this field include for example Basel Abbas and Ruanne Abou-Rahme's immersive installation *The Zone* (2011, https://baselandruanne.com), Larissa Sansour's science fiction short film *Nation Estate* (2012, https://larissasansour.com), and Yazan Khalili's various photographic projects including *On Love and Other Landscapes* (2011), *Landscapes of Darkness* (2010) and *Colour Correction – Camp Series* (2007–10, http://yazankhalili.com), to name a few. Works that specifically dialogue with *Detroit*'s subject matter include Bashir Makhoul's works *Enter Ghost, Exit Ghost* (2012) and *Giardino Occupado* (2013, http://bashirmakhoul.co.uk), as well as Wafa Hourani's *Qalandia 2067* (2008, https://saatchigallery.com).
24. For Woodward's explication of the term, see Rachel Woodward, 'From Military Geography to Militarism's Geographies: Disciplinary Engagements With the Geographies of Militarism and Military Activities', *Progress in Human Geography* 29, no. 6 (2005): 718–40. For my own engagement with Woodward's terms in relation to civil militarism in Israeli society see Noa Roei, 'Looking Through Landscape', in *Civic Aesthetics: Militarism, Israeli Art and Visual Culture* (London: Bloomsbury Academic, 2017), 65–90.
25. Woodward, 'From Military Geography', 718–40.
26. A reproduction of this work is available online at https://moma.org.
27. Reproductions from the series are available online at http://shaikremer.com. Both 'Detroit' and 'Chicago' are pseudonyms for overlapping sections of the ever expanding Tze'elim Military Urban Training Centre. Another telling nickname for the space is 'Baladia', which translates from Arabic to mean 'municipality' but is understood in the context of Tze'elim to stand as a generic term for town or city. Eyal Weizman, 'Urban Warfare: Walking Through Walls', in *Hollow Land: Israel's Architecture of Occupation* (London: Verso, 2007), 205–8; Graham, 'Gaza is Everywhere', 144–48.
28. An impression of the project is available online at http://broombergchanarin.com.
29. Eyal Weizman, 'Frontier Architecture', in *Adam Broomberg and Oliver Chanarin, Chicago* (Göttingen: Steidl Verlag, 2007), n.p.
30. An overview of the project as well as a short interview with the artists is available online at https://themorningnews.org. See also Ursula Frohne, 'Expansion of the Immersion Zone: Military Simulacra between Strategic Training and Trauma', in *Immersion in the Visual Arts and Media,* ed. Fabienne Liptay and Burcu Dogramaci (Amsterdam: Brill | Rodopi, 2016), 215–48.
31. For detailed explorations of landscape imagery and spectatorial practices, see W.J.T. Mitchell, *Landscape and Power* (Chicago: University of Chicago press, 2002); Ernst van Alphen, 'The Representation of Space and the Space of Representation', in *Art in Mind: How Contemporary Images Shape Thought* (Chicago: University of Chicago Press, 2005), 71–97.
32. Gordon Hon, 'Enter Ghost, Exit Ghost', in *Bashir Makhoul: Enter Ghost, Exit Ghost*, ed. Gordon Hon (Beijing: Yang Gallery, 2012), 15. Available online at https://issuu.com
33. An impression of the project is available online at http://bashirmakhoul.co.uk. The cardboard boxes

that make up Makhoul's model resonate not only with the urban layout of the mock-up city but also with the actual use of cardboard facades and props within it.

34. Lenticular prints are most commonly found in street advertising and on postcards.
35. John Beck, 'In and Out of the Box: Bashir Makhoul's Forbidden City', *Theory, Culture & Society* 29, no. 7/1 (2012): 346.
36. See also, Ryan Bishop, 'The Threat of Space: A Discussion between Bashir Makhoul and Gordon Hon,' *Theory, Culture & Society* 29, no. 7–8 (2012): 324–40.
37. Frohne, 'Expansion', 219.
38. Michel Foucault, 'Of Other Spaces: Utopias and Heterotopias', trans. Jay Miskowiec, *Diacritics* 16, no. 1 (1986): 22–27.
39. David Pinder, 'Cartographies Unbound', *Cultural Geographies* 14, no. 3 (2007): 453.
40. Denis Wood, *The Power of Maps* (New York: Guilford Press, 1992); Crampton and Krygier, 'Introduction', 11–33.
41. Military urban training facilities such as and including Detroit are utilised for training soldiers from different armies for combat in a variety of geographical contexts. Eyal Weizman, 'Urban Warfare', 207.
42. Baudrillard, *Simulacra*, 40.
43. Nuha Khoury, 'One Fine Curfew Day' (Jerusalem: Miftah, 2004), n.p. Available at http://miftah.org. Also quoted in Weizman, 'Urban Warfare', 185.
44. See https://btselem.org for an online archive of human rights violations in the Occupied Territories. The history of the city of Hebron is a case in point for the gradual destruction of Palestinian urban fabric, see the website of B'tselem, The Israeli Information Centre for Human Rights in the Occupied Territories: https://btselem.org. See also Gregory, *The Colonial Present*, 13, 76–146, for a detailed historical account of the spatial and cartographical performances that 'bring the colonial present to focus' in their insistent preclusion of the possiblity of everyday civilian life in Palestinian urban and rural dwellings. A recent case in point for the disregard of property rights during routine military training is reported on the B'tselem site, 10 June 2020, available at https://btselem.org.
45. The discrepancy in spatial interpretations that Khoury points to resides here between civilian and military forms of interpreting space, that surpass, in times of combat, the distinction between Palestinian and Israeli perspectives. As Weizman makes clear, modes of spatial address used by the Israeli army are comparable to an extent with the ways Palestinian guerrilla fighters move unconventionally through the urban fabric. At the same time, my point is precisely that, within the prism that Detroit (and other facilities like it) offers, there is no non-combat time, and the urban fabric in question is always and already framed as everlasting battle ground. Weizman, 'Urban Warfare', 195.
46. Aritha van Herk, 'The Map's Temptation or the Search for a Secret Book', *Journal of Commonwealth Literature* 31, no. 1 (1996): 133–34.
47. Stephen Graham, 'Cities and the "War on Terror"', *International Journal of Urban and Regional Research* 30, no. 2 (June 2006): 266.
48. Graham, 'Cities', 262, 271.
49. Ibid., 262. Graham and others point to the ways in which the legibility of such training sites is constructed in close collaboration with virtual simulation of space, spanning from the incorporation of virtual reality technology in military training to urban warfare video games. See, in addition, Frohne, 'Expansion', and, specifically for the Israeli case, Chava Brownfield-Stein, 'The Eyes of the State: The "See-Shoot" Weapons System, Border Surveillance, and Nintendo Warfare', *Res Militaris: European Journal for Military Studies, ERGOMAS* 6 (March 2019): 1–14.
50. For example, in time slots 05:43; 05:51; 06:22, 06:23 and 06:52.
51. Representations of both works are available online, at http://shaikremer.com and http://broombergchanarin.com, respectively.
52. Eyal Weizman, 'Walking Through Walls: Soldiers as Architects in the Israeli-Palestinian Conflict', *Radical Philosophy* 136 (March–April 2006): 10; Eyal Weizman, 'Urban Warfare', 185–218.
53. Weizman, 'Walking Through Walls', 9.

54. Ibid, 10.
55. Roland Barthes, 'The Reality Effect', in *French Literary Theory Today,* ed. Tzvetan Todorov (Cambridge: Cambridge University Press, 1982), 11–17.
56. Stephen Graham, 'Countergeographies', in *Cities Under Siege: The New Military Urbanism* (London: Verso, 2011), 348–360.
57. The video report is available on the website of *Vice,* accessed 20 July 2020, https://video.vice.com.
58. Weizman, 'Walking Through Walls', 20.
59. Weizman, 'Urban Warfare', 207.
60. On this note see the essay collection by Nabeel Abraham, Sally Howell and Andrew Shryock, eds., *Arab Detroit 9/11: Life in the Terror Decade* (Detroit: Wayne State University Press, 2011).
61. Weizman, 'Walking Through Walls', 8.
62. W. J. T. Mitchell, 'What do Pictures "Really" Want?', *October* 77 (1996): 74.

Biography

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In the Midst of the Revolution: The *Rond-Point* as Media of Contention

Lutz Robbers

When in November 2018 the *gilets jaunes* movement began to flare up all over France, an often overlooked yet ubiquitous element of infrastructural design gained surprising prominence: the roundabout or *rond-point* as the new locus of political contention. The unprecedented mobilisation of people devoid of participation and visibility in established public spheres defied not only the institutionalised forms of political protest. They also snubbed the traditional spaces of political representation: the centrally located public open space, usually a square, plaza, or market place. Contrary to other recent protest movements which perpetuated the traditional localisation of the political in central urban locations (for example Tahrir Square and the Egyptian Revolution, 2011; Zuccotti Park and Occupy Wall Street, 2011; the Place de la République, and Nuit debout, 2016), the *gilets jaunes* movement shunned the urban centres. Instead, in acts of open defiance towards conventional spaces of political representation, demonstrators relocalise the political inside the peri-urban landscapes of a postindustrial capitalist society.[1] Perplexed by the novelty of the political movement the roundabout was soon designated, for lack of a better term, the agora or forum of the present era.

The purpose of this essay is to explore the political agency of this element of infrastructural design, which, since the 1980s, has become a ubiquitous feature of urban planning across the French *territoire*. Doesn't the fact that the *gilets jaunes* seem to choose the peripheral roundabouts as their preferred sites of political contestation – while ignoring the square in the town centre – attest to a proverbial political unconscious? What makes the centres of the roundabouts amidst the informal peri-urban space such attractive mediators for the political causes of the *gilets jaunes*? Doesn't the fact that thousands of yellow vests perseveringly chose to assemble at or on roundabouts require us to come up with alternative ways of thinking the spatial settings for the appearance, the representation and the practice of 'the political', the *res publica* or public matter?

Rather than perpetuating the idea of an idealised public space such as the agora, the forum, or the square, which because they remain void allow for processes of signification and symbolisation to occur, this essay attempts to comprehend the roundabout as a space of a new political imaginary in the sense of a medium or mediator. By media I do not mean instruments to project the (designing) subject's will onto the objective world. Rather, media should be understood as *dispositifs* or, as Reinhold Martin put it, 'systems that condition experience, delimit the field of action, and partition knowledge'.[2] How then, I will ask, does the roundabout as medium reframe political experience, action and knowledge?

My argument is split in three parts. The first part introduces the question of the roundabout as site of the political through a reading of the film *Trop tôt, trop tard*. In the second part, I argue that

the enthusiasm of modern architecture and town planning for roundabouts attests to an underlying comprehension of the urban – and, by consequence, of the political – as an uncontentious space where conflicts are managed and neutralised. And in the third part, I argue that the *gilets jaunes*, by occupying the void of the roundabout, they reclaim an original form of local, immediate, unrepresentative politics. By appropriating the *rond-point* they redefine this element of traffic infrastructure as an exemplary thing with which to think architecture as a matter of contention located at the crossroads between aesthetics and politics.

Too early, too late

The opening sequence of the experimental film *Trop tôt, trop tard* (1982) by Jean-Marie Straub and Danièle Huillet might serve as a point of entry to illustrate my argument. In the beginning of the film, the spectator sees an uncut tracking shot, lasting more than five minutes, taken from an automobile continuously circling the Place de la Bastille in Paris, altogether seven times. [Fig. 1] Through the passenger window and against the urban backdrop, we see the other cars arranging themselves within the flow of the traffic circle, overtaking us, falling behind, moving away. As spectators, we – like the drivers who enter the frame and disappear from it again – become actors in a continuously rotating panorama. What becomes visible with every revolution is the play between the now converging, now diverging cars, as they strive to avoid the ever-present danger of collision. Remaining invisible meanwhile is the centre of the roundabout, the monumental *Colonne de Juillet*, the urban symbolic inscription memorising the storming of the Bastille in 1789.

Not without irony, Straub and Huillet show us the Revolution as a proverbial circumvention of the Bastille. The urban square, legacy of the classical agora or forum, was once regarded as the quintessence of the localisation of the political. As a central, blank, empty space within the densified city it became an idealised scene for the staging of debates, demands, protests, and revolts, the spatial embodiment of an idealised public sphere. In contrast, Straub and Huillet frustrate the spectator's expectation: the Place de la Bastille is not represented as a symbolically charged square but as an infrastructural device. The camera-eye, rather than capturing the scene from a detached point of observation, becomes immersed within the urban apparatus. Blurring the coordinates of space, the movement of the camera-spectator-motorist engaged within the perpetual traffic flow preventing collisions between the atomised drivers. In the opening scene, space is presented as a form of flux dis-figuring and ultimately relieving the cityscape of its multiple symbolic charges. According to Jean-Marie Straub this space is

> full of traffic, or engulfed in traffic … But once upon a time it was a human space, for it was a public square and above it, on top of the column is the statue of the "Spirit of Liberty", which you don't see, because you're circling around it recounting how the bourgeoisie were always betrayers.[3]

As spectators-motorists we become aware that we just like our fellow-motorists are imprisoned inside isolated vehicles, perpetually turning in circles and being centrifuged away from the ultimately unknowable centre.

In this way, the tracking shot performs a transformation of the space of the Revolution. After more than two minutes of circulating at a constant pace, we hear the voice of Danièle Huillet reciting a letter from Friedrich Engels to Karl Kautsky. Not only does the letter describe the misery of the French peasants on the eve the Revolution, citing from the *Cahiers des doléances* (notebooks of grievances) compiled in 1789 from the consultation of

the different Estates.[4] It also addresses Engels's Marxist historical understanding of the revaluation of the values of equality and fraternity.

> Then it will be plain that the bourgeoisie was too cowardly in this case as always to uphold its own interests; that starting with the Bastille events the plebs had to do all the work for it … but that this could not have been done without these plebeians attributing to the revolutionary demands of the bourgeoisie a meaning which they did not have, without their pushing equality and fraternity to such extremes that the bourgeois meaning of these slogans was turned completely upside down, because this meaning, driven to its extreme, changed into its opposite; that this *plebeian* equality and fraternity was necessarily a sheer dream at a time when it was a question of doing the *exact opposite*, and that as always – the irony of history – this *plebeian* conception of the revolutionary watchwords became the most powerful lever for carrying into reality this opposite: *bourgeois* equality – before the law, and fraternity – in exploitation.[5]

The space of revolution turns around, changes perspective, prompts its own re-evaluation. What is left of the powerful popular masses storming the Bastille in 1789 is the memory in the form of a monument placed at the rotary's centre, an invisible yet present void that can no longer be represented. We, as spectators and urban dwellers, are caught inside of the mesmerising revolution that assembles an atomised and mobilised public, a public collectively attracted and ejected one after another by a force at its invisible centre. Like the revolting plebeians, we as spectators are also always too early or too late: just when I see a fellow motorist approaching he or she is about to disappear; just when the intersecting of individuals prompts the possibility of recognising the other as equal, it turns into a sensation of loss. And just when we begin to recognise features of the urban environment to gain an image of the city, they have already left the frame. In a sense, as much as *Trop tôt, trop tard* is an allegory of a class conflict that has failed, it is also an apt representation of media capable of successfully managing conflicts of both mobile inhabitants and images. Roundabouts and film seem to achieve the same thing: instead of perpetuating the revolution's failure of meeting the right moment in time, both act as mediators that render tangible the interval or threshold between things or images.[6]

Following the opening continuous six-minute delirium on the Place de la Bastille, the film changes its cinematographic form. Now we see slow panning and still shots of empty landscapes in France. [Fig. 2] Straub and Huillet present to view rural places such as Tréogan, Motreff, Marbeuf and Harville but also urban panoramas of Bayeux, Paris and Lyon. Devoid of all human presence, the French countryside has a 'science-fiction, deserted-planet aspect'[7] to it. The idea of the film was to revisit the places Engels describes in his letter to Kautsky, places where the misery of the peasants were recorded on the brink of the French Revolution in the *Cahiers de Doléances*. All we see now are traces of human activity: fields, hills, trees, fences, near-deserted roads, buildings and villages in the distance. 'Maybe people live there, but they don't inhabit the locale',[8] as the film critic Serge Daney described the scene. We hear birds, the wind and the distant humming of traffic – a soundscape repeatedly interrupted by Danièle Huillet's solemn voice reading from Engels's factual description of the pauperisation experienced by the local populations just before the Revolution.

The final take from these depictions of the French countryside that make up the first part of the film shows a fragment of a wall on which a red inscription is visible: 'The peasants will revolt 1976'. [Fig. 3] At the same time, the voiceover draws an analogy with the Paris Commune during the French Revolution:

Fig. 1

Fig. 2

Fig. 1: Jean-Marie Straub and Danièle Huillet, *Trop tôt, trop tard*,1982, sequence of film stills.

Fig. 2: Jean-Marie Straub and Danièle Huillet, *Trop tôt, trop tard*,1982, film still.

Fig. 3

Fig. 3: Jean-Marie Straub and Danièle Huillet, *Trop tôt, trop tard*,1982, film still.

> "Well-being for all on the basis of labour" still expresses much too definitely the aspirations of the plebeian *fraternité* of that time. No one could tell what they wanted until long after the fall of the Commune Babeuf gave the thing definite shape. Whereas the Commune with its aspirations for fraternity came too early, Babeuf in his turn came too late.[9]

'Too early, too late' becomes the recurring leitmotif for the montage of present and past, of image and voice, of experience and memory. Daney describes the imagery of Straub and Huillet as 'the shot as tomb', a cinematographic representation of a conflict that contains what must remain invisible: 'The content of the shot, *stricto sensu*, is what it hides: the bodies under the ground'.[10] The difference between what we see and what we hear, what we perceive and what we know can never be resolved. In fact, it the absence that is constitutive for attesting a historical truth – an argument reminiscent of Walter Benjamin's description of Eugène Atget's photographic documentations of empty Parisian streets as 'scenes of crime'.[11] Both Atget's and Straub/Huillet's documentations are 'evidence on historical trial', demanding 'a specific kind of reception' from the viewer – namely the ability to comprehend the image (or the landscape) as 'prescribed by the sequence of all the preceding images'.[12] It seems that Straub and Huillet are driven by the very same conviction as Benjamin, namely that the estrangement between man and his/her environment will have a salutary effect. Through the bodily and material immanence of the material world (mediated through photographs, films, or architecture) an unconscious knowledge of the past is actualised in what Benjamin famously called the 'now of recognizability'.[13]

Voided of its signifying elements, it is the landscape that seems exempt from the too early/too late dilemma of all revolutionary struggles while still assuring the correspondences with the revolutionary past. Trees, clouds, grass, roads, houses, the wind bear witness too of past crimes. Tellingly, Gilles Deleuze called the films by Straub and Huillet exercises in 'stratigraphy' inferring vanished layers of history that cannot be seen on the surface of the image, yet read as a '"coalescence" of the perceived with the remembered, the imagined, the known'.[14] In order to understand an event we need 'to connect it to the silent layers of earth which make up its true continuity, or which inscribe it in the class struggle'.[15]

In *Trop tôt, trop tard*, this stratigraphic dimension is displaced in space and time. After the deserted French landscapes accompanied by Engels's text, we see panning shots of the Egyptian countryside with the voiceover of Mahmoud Hussein, a contemporary author reading from his *Class Conflict in Egypt*.[16] While the fields and streets are now filled with people, history repeats itself: the peasants revolt too early against Britain's colonial occupation and succeed too late with the revolution of Naguib.

Hence, Straub and Huillet's 'radical materialism of the mise-en-scène' (Rancière) aims at eliminating all elements of representation and replacing them with the delirious spectacle of the atomised motorist-spectator or landscapes' stratigraphic power of coalescing the past with the now.[17] In both cases, representation is deferred, submerged or kept from view. Straub and Huillet perpetuate the modernists' fascination with voids, absence and emptiness. The impressionist painter Gustave Caillebotte, for example, repeatedly captured the horror vacui prompted by the emergence of modern metropolitan infrastructures. *Un Refuge, Boulevard Haussmann* depicts an almost deserted traffic island in Paris from a vertical oblique angle. [Fig. 4] We see a flat, abstract void onto which isolated figures and objects are pasted. Whereas Straub and Huillet's opening sequence frames the analogy between moving image and moving vehicle as an allegory for the endless deferral of the revolution (always simultaneously in a state of loss and becoming, at once too early and too late), Caillebotte depicts the

Fig. 4: Gustave Caillebotte, *Un Refuge, Boulevard Haussmann*, ca. 1880, oil on canvas, private collection. Source: Martin Schieder, 'Stadt/Bild. Gustave Caillebotte, Baron Haussmann und eine Verkehrsinsel', *Themenportal Europäische Geschichte*, 2015, www.europa.clio-online.de.

non-synchronicity of the urban dwellers with their urban surroundings prompted by Hausmannian modernisation. The urban stage is the roundabout, the new element of urban infrastructure onto which disparate elements are assembled: formally dressed yet anonymous passers-by, lavishly decorated yet mundane street lights and an amorphous massing of thick streaks of paint that might be identified as a pile of rubble or a construction trench. Here the flattening of urban signifiers turns into an instance of immanence by connecting the viewer to the silent layers of earth. The urban soil or material debris offers the viewer a sanctuary from the dislocating and anaesthetic experience of the metropolis – just like the roundabout became a refuge for the pedestrian of the modern city from the threat of onrushing vehicles.

Avoiding conflict

In *Trop tôt, trop tard* the urban centre is no longer the locus of the political. Despite its political subject – revolutions in France and Egypt – the film shuns the visual representation of urban space. One would expect the urban to be the natural habitat of the public sphere, the space where diverse actors co-exist, gain representation and interact, where subjects voluntarily expose themselves to the unknown and the unexpected – as Richard Sennett has argued.[18] If the idea of the public sphere ultimately resided in its capacity to generate and arbitrate conflicts and if urban space, by definition, is the product of these conflicts,[19] Straub and Huillet suggest that the conflicts can no longer be represented on an urban stage and that they have migrated to the countryside. With the site of the political shifting, the urban realm's capacity to articulate and integrate the Other by coming together in contentious and conflictual ways wanes. The proliferation of practices of urban management seems to have rendered the idealised existence of public space as 'a community based on unresolved dispute' all but redundant.[20]

Historically, the development of the roundabout happened independent of and in opposition to the enclosing town square as a centralising and symbolically charged urban locus. Circular forms and radiating lines first appeared in Renaissance town planning and landscape design. Especially forests, privileged hunting ground for royalty, transformed into spaces of representation and spectacle.[21] In order to control amorphous nature, land surveying methods were used that laid out radiant lines from a central point of observation in order to cut linear swaths through the vegetation. These points of observation became the first *ronds-points*: gathering sites for hunting parties facilitating the scenic witnessing of the hunting events and being easily accessible by carriage. It took until the eighteenth century for the geometrical figure of the central circle from which numerous straight lines emanate to enter the formal vocabulary of urban planning. Already at this moment, the tension between its form and its operational function becomes apparent. For example, the Parisian *places royales*, designed as an enclosed space of representation (with the equestrian statue of the king at the centre facing the surrounding harmonious facades) against the informality of the circumjacent urban fabric, was soon regarded solely as a useful means for facilitating street circulation.[22]

With the introduction in 1903 of the term '*carrefour à giration*' by the French architect Eugène Hénard this dialectic resolved in favour of its operational agency. The *rond-point* lost all representational functions to become a technological apparatus for the management of single-direction traffic flow around an isolated central island. With the intensification and acceleration of movements of people and vehicles, the urban intersection was increasingly regarded as a dangerous zone of conflict. The advent of automobiles further enhanced the risk of accidents. 'Because the problem emerged through the encounter between two intense currents of

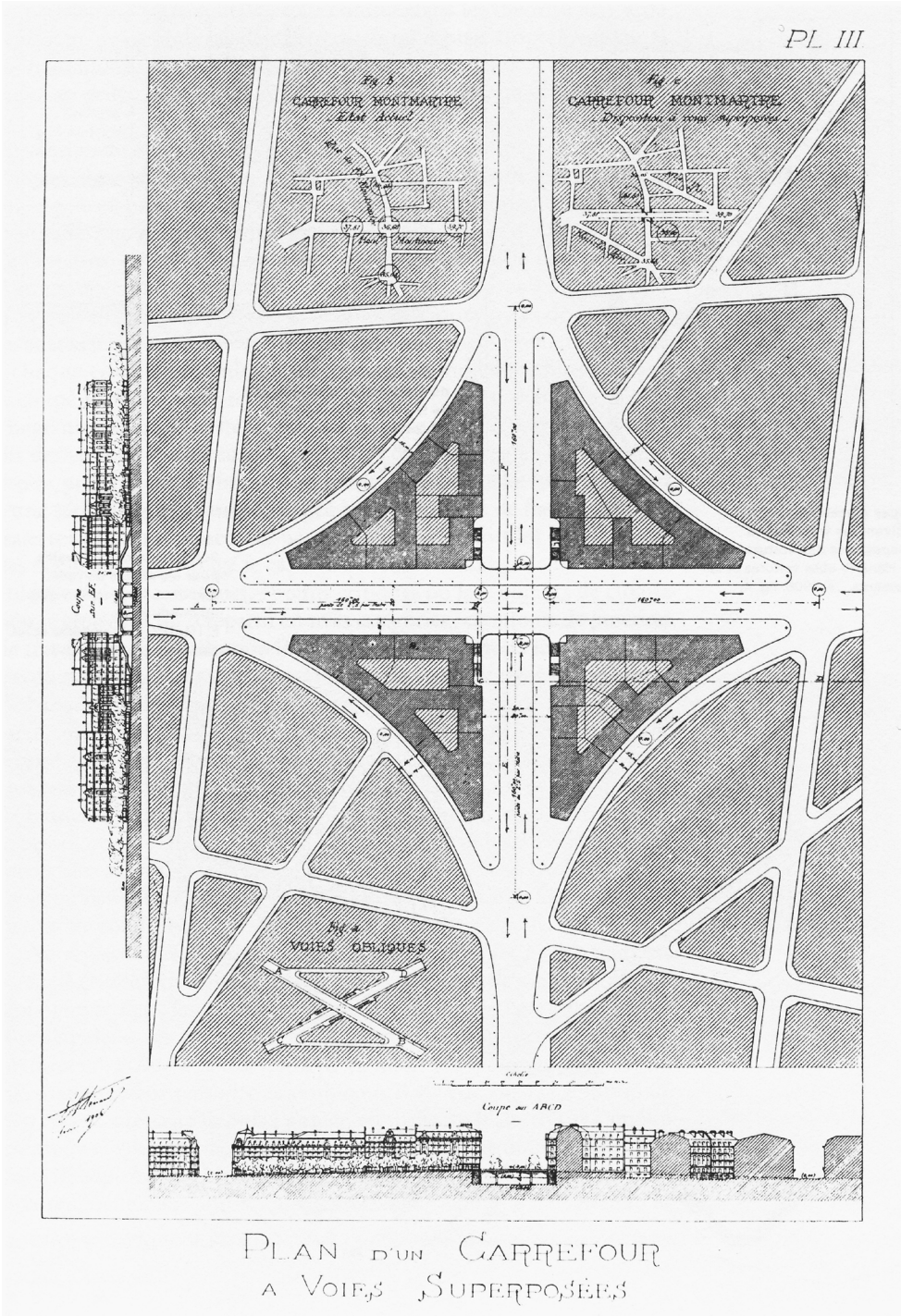

Fig. 5: Eugène Hénard, *Carrefour à voies superposées*, 1906. Source: Eugène Hénard, *Les Voitures et les passants Carrefours libres et carrefours à giration* (Paris: Librairies Imprimeries Réunies, 1906), plate III.

circulation, we will suppress the cause of the conflict by letting one current pass on top of the other', Hénard argues and proposes – like Cerdà and Olmsted before – a *carrefour* à *voies superposées* (junction with overlapping lanes).[23] [Fig. 5] The alternative solution was the *carrefour à giration* or roundabout. Here the centre of the intersection must remain void, or rather filled by a barrier or obstacle that the automobiles cannot surmount. In his drawings for a *carrefour à giration,* a rotational intersection, the *plateau central* appears as an open, circular area around which traffic flows in one direction. [Fig. 6] Through the continuous movement of the vehicles, the 'points of conflict' disappear.

Hénard's propositions to transform the conflictual intersections into technological apparatuses for the efficient, accident-free distribution of traffic flows are part of a longer history of urban infrastructural management of people, objects and vehicles.[24] Already in 1909, Hénard's ideas inspired Unwin and Parker's planning in Letchworth, hence bringing the roundabout to suburbia where it has become a distinguishing design element until the present day. Hénard also prepared the ground for modernist urban planning's penchant for the functionalist engineering of smooth and uninterrupted processes. The Athens Charter with its strict separation of housing, work and recreation from traffic infrastructures marks the triumph of a non-conflictual modernist urbanity. The roundabout became the *dispositif* par excellence to perform the rupture with the traditional city and its propensity for pedestrian-level interactions. In Le Corbusier's urbanistic thinking, the roundabout functioned as an essential design element for implementing his machinist vision of an unfettered urban organism. Convinced that 'the crossing of streets is the enemy of the circulation',[25] already for his 1922 project *Contemporary City for Three Million Inhabitants* he envisioned implementing superimposed traffic circles. [Fig. 7] The roundabout as technological *dispositif* supersedes the ways a conflictual urban public space traditionally helped inscribe political meaning or allowed political practices to emerge. Instead, the automobile inhabitants, while uninterruptedly moving on sinuous roads, experience the city as a cinematic spectacle 'organized by an architecture which uses plastic resources for the modulation of forms seen in light'.[26]

Similarly, the 1929 competition to transform Berlin's Alexanderplatz into a true *Weltstadtplatz* inserted this modernist penchant for infrastructure and flow into the (re)planning of the urban centre. The competition brief demanded from all participants to conform their proposals to the demands of the movement and the density of car traffic. An essential part of the brief was the installation of a roundabout with a diameter of fifty metres.[27] Accordingly, the winning entry by Hans and Wassili Luckhardt completely subordinated architectural form to the shape and experiential potential of the roundabout: the composition of horizontally structured, glazed facades envelope the vast circular and dark void at its centre, integrating the uninterrupted traffic flow of bodies and vehicles into the reifying commercial spectacle of the metropolis. [Fig. 8]

By deliberately violating the competition brief Ludwig Mies van der Rohe's design offers an alternative proposal. [Fig. 9] His composition of altogether eleven office buildings demonstratively refuses to subordinate architecture to the primacy of a purely functional infrastructure. By treating both independently, his project shields architecture from being 'raped by the traffic'.[28] Mies rejects the demand to subject the metropolis to the functionalist demands of the present and the 'brutal violence' with which traffic has affected the 'organisms of our cities'.[29] At the same time, the 'image of the city' (*Stadtbild*) created by Mies, as the editor of the Werkbund publication *Die Form* Wilhelm Lotz argues, is not something that is composed of

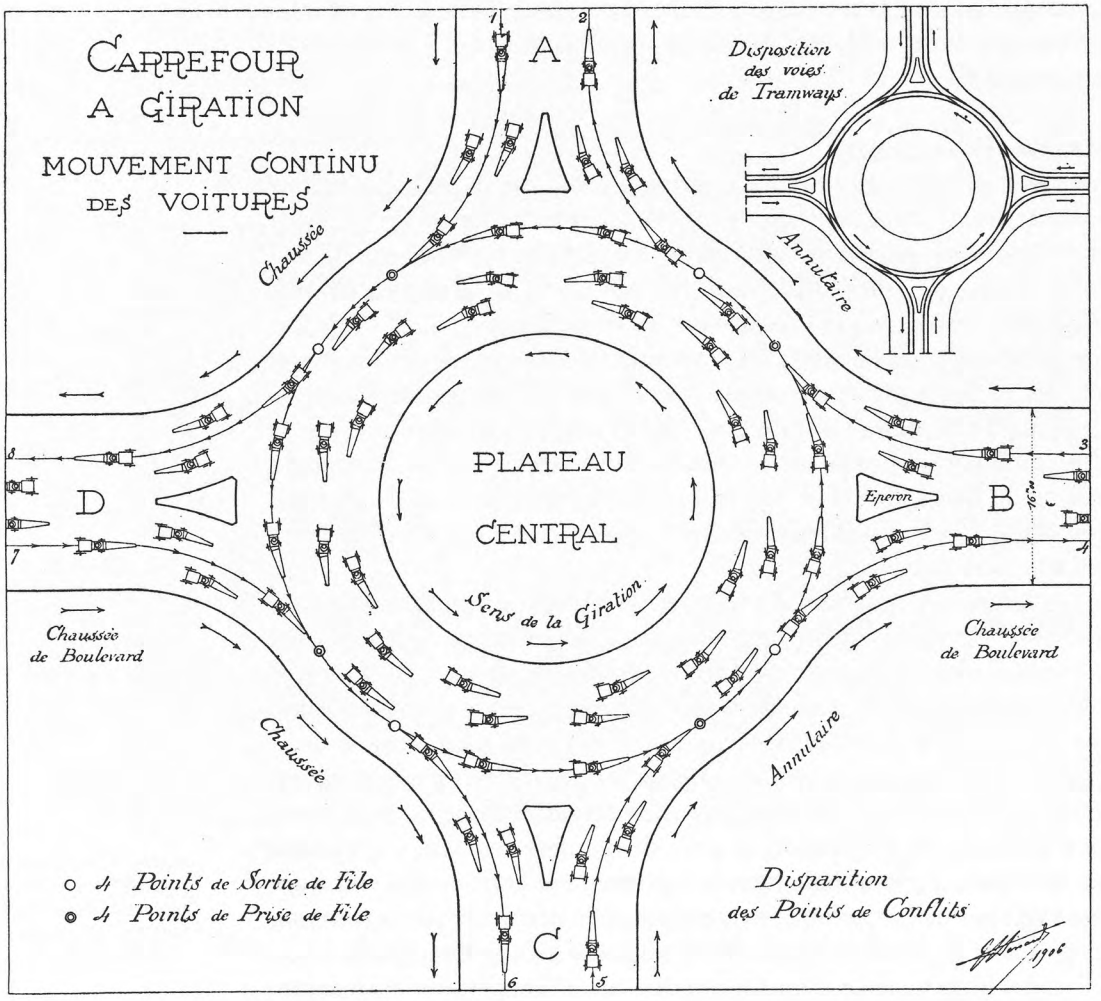

Fig. 6: Eugène Hénard, *Le carrefour à giration*, 1906. Source: Eugène Hénard, *Les Voitures et les passants Carrefours libres et carrefours à giration* (Paris: Librairies Imprimeries Réunies, 1906), fig. 9.

'scenic pictures' (*Schaubilder*).[30] In other words, Mies's Alexanderplatz proposal fails both as representation of the new infrastructural paradigm and as representation of a symbolic order.

Mies's roundabout in the heart of Berlin is neither an instrument of functional, infrastructural urban design nor an idealised modern agora for the resolution of the dialectical conflict between form and flux, architecture and traffic infrastructure. Rather, it perpetuates a montage of incongruous elements that interrupts and interrogates all conventional solutions. If the Miesian roundabout deliberately rejects the role of stage for the political, place for a monument, and even as infrastructural residue, what role does it play? The Heideggerian notion of *Lichtung* or 'clearing' could be helpful.[31] Contrary to an empty space that awaits inscription allowing 'scenic pictures' to appear or acts as 'a fixed stage with a permanently raised curtain on which the play of beings enacts itself', a clearing 'itself encircles all beings – like the nothing that we scarcely know'.[32] Perceived as a *Lichtung*, Mies's roundabout is no longer a void within urban spaces filled with signification, but an 'illuminating centre' (*lichtende Mitte*) that rather than being illuminated through symbolic inscriptions or functional attributions becomes itself an unknowable 'happening' that cannot be represented or observed.[33]

Just as the modernist filmmaking of Straub and Huillet eliminates all elements of representation and displaces conflict onto a stratigraphic plane, Mies presents us with an urban landscape as a passage that leaves contradictions between form and function, past and present, architecture and infrastructure unreconciled. Being always too early or too late might have been the tragic shortcoming of the revolutions. It is the hidden structural virtue of cinema and, one might argue, of the roundabout.

What appeared to Hénard as the solution to a traffic problem is transformed by Mies into the precondition for a new experience of space. The *gilets jaunes*, who were socialised in this space of the automobile, occupy the voided centre of the roundabout precisely because it lacks symbolic signification and it has the potential to act as a *Lichtung* that fundamentally alters the political. In the roundabout, the place of the revolution is no longer the symbolically charged centre where the conflicts are acted out and presented to view. Instead, the centre, once the locus of power and meaning, becomes an invisible mediator of this new mobile spatio-visual order facilitating the traffic flow and assuring the prevention of collisions and conflicts.

Occupying the void

In an interview, the French intellectual Alain Finkielkraut calls it 'touching and suggestive' that the *gilets jaunes* chose as sites of protest the roundabouts located at the peripheries of French cities, converting them, as Finkielkraut put it, 'into genuine agoras and forums'.[34] [Fig. 10] Yet he appears flabbergasted not only by the unprecedented nature of the social movement – spontaneous, informal and devoid of a coherent political programme and representation. He also seems surprised that of all places, they chose roundabouts as the preferred sites of contestation. The fact that the overlooked populations of *France périphérique* occupy those empty spaces created by the flow of traffic, which must remain blank in order to avoid concrete conflictual collisions, testifies to the yellow vests' well-developed political consciousness.

Finkielkraut's casual use of terms like 'agora' and 'forum' is of course charged with a number of assumptions. Both terms appear as spatial manifestations of the political and preconditions for democracy to take place. In Greek antiquity, it is on the agora as the classical space of assembly where the demos is formed in a 'clash of discourse' and 'debates that take place in the assembly'.[35] Here, collective self-awareness is generated symbolically

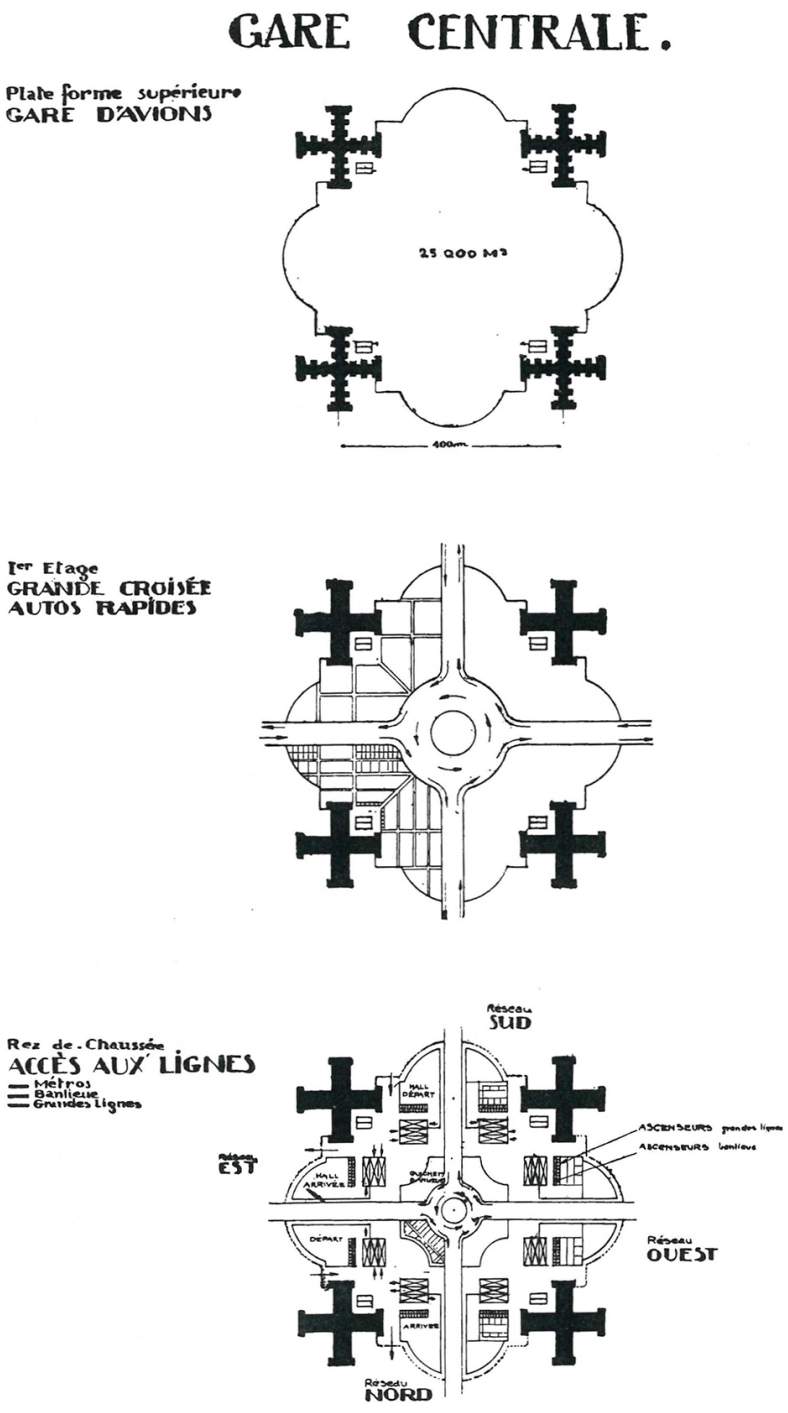

Fig. 7: Le Corbusier, *Central Station, Contemporary City*, 1924. Source: Le Corbusier, *Urbanisme* (Paris: Éditions G. Grès et Cie, 1925), p. 172.

(albeit temporarily) through the initiation of formal speech within an open space free of inscriptions, usually taking the form of a circle or a semicircle.[36] The speech must concern public affairs relating to the community, which in turn is constituted through the right to speak. Only later, these assemblies of the common became associated with buildings and monuments representing divine or state power. First, it was the Greek temple that functioned as a public space and became 'a property of the city'.[37]

It is this attitude towards free space for the temporary inscription of speech that distinguishes the *gilets jaunes* from other protest movements. Whereas *Occupy Wallstreet*, for example, although seemingly similar to the *gilets jaunes* in their anarchist refusal to recognise the legitimacy of political institutions,[38] targeted particular symbols, spaces and monuments associated with the political adversary, the contention of the *gilets jaunes* appears to be first and foremost concerned with occupying a void – as a precondition for the political to emerge. Instead of expressing their political discontent by taking to the urban stage – performing institutionalised appeals to political representatives or assailing the symbols of reigning powers – the yellow vests seem to reinvent that stage altogether.

In that sense, the political spatial practice of the *gilets jaunes* and their unconscious predilection for peri-urban traffic circles fundamentally differs from the 'roundabout revolutions' Eyal Weizman recently analysed.[39] The examples Weizman refers to – most notably Tahrir Square in Cairo, Manara Square in Ramallah and the roundabout in front of a government building in Gwangju, South Korea – are all centralising parts of a symbolically inscribed urban fabric. He explains the seemingly obvious correlation between revolution and roundabout by their being located at a 'single pivotal point within a networked infrastructure' which can easily exploited by the protesters to interrupt the flow of traffic.[40] The occupation of these roundabouts hence appears to follow the customary script of urban protests: protesters challenge the symbolic powers in place by first deactivating the infrastructural functions, transforming the space of passage into a political stage.

By contrast, the *gilets jaunes* neither disturb the flow of traffic, nor do they rebel against symbolically charged monuments or sites. They appear to choose the peri-urban roundabouts for their assemblies precisely because of their lack of signification. The motivation to gather amidst the *terrain vague* of the automobile cluttered with fast food outlets, big box supermarkets, logistics warehouses and uniform housing estates – in fact, the *gilets jaunes'* very own lifeworld – resides less in their desire to block circulation or to compel a visibility usually denied to them. Rather than engaging in and hence recognising the existing symbolic order through antagonistic rites of contention they practice an immediate, (re)localised *Ur*-form of politics. The political scientist Laurent Jeanpierre has identified within the *gilets jaunes* movement a rejection of a 'scholastic bias' of the dominant strata of society. Instead, the *gilets jaunes* embrace forms of speech that 'unfold in the name of lived and shared experience'.[41]

By exhibiting their political presence exempt from all ideologies, symbols, representations and visions of a future to come, the *gilets jaunes* embrace their local postindustrial landscapes as their 'living social context'.[42] By inserting themselves into the concrete infrastructural devices responsible for managing flows of people and things and hence for avoiding conflict, the *gilets jaunes* recuperate the space of the political beyond antagonist contention and the politics of representation. And by doing this, they not only gain visibility as a protesting demos – which the traditional urban stage of political representation denies them. Their immediacy also renders visible the way such urban devices as the town square or the roundabout operate as mediators.

Fig. 8

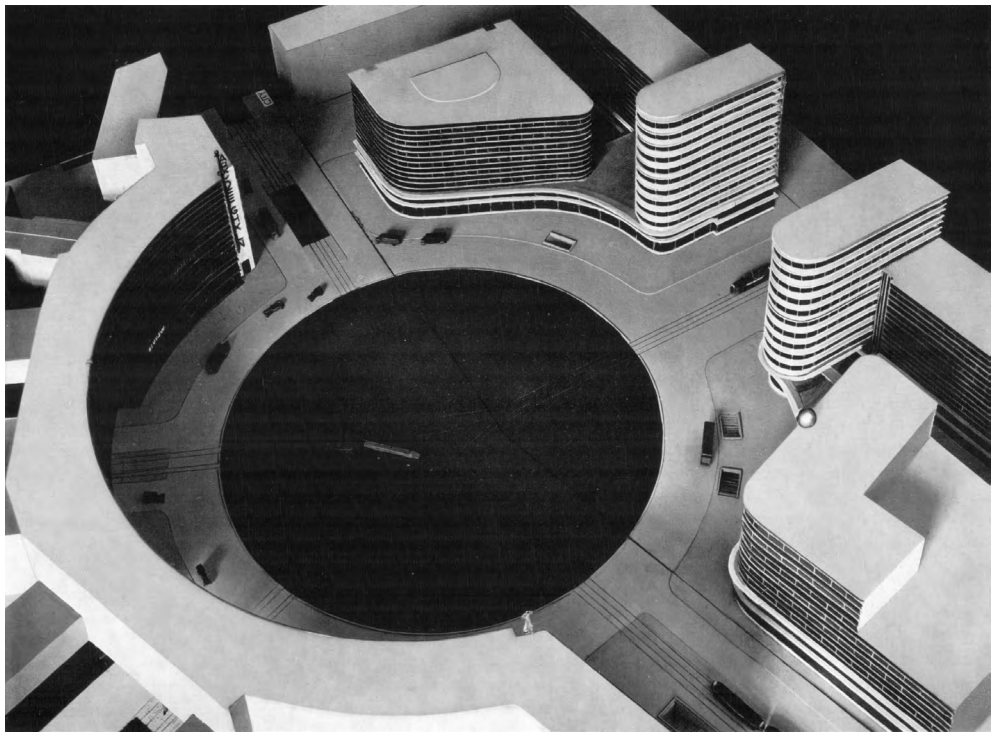

Fig. 9

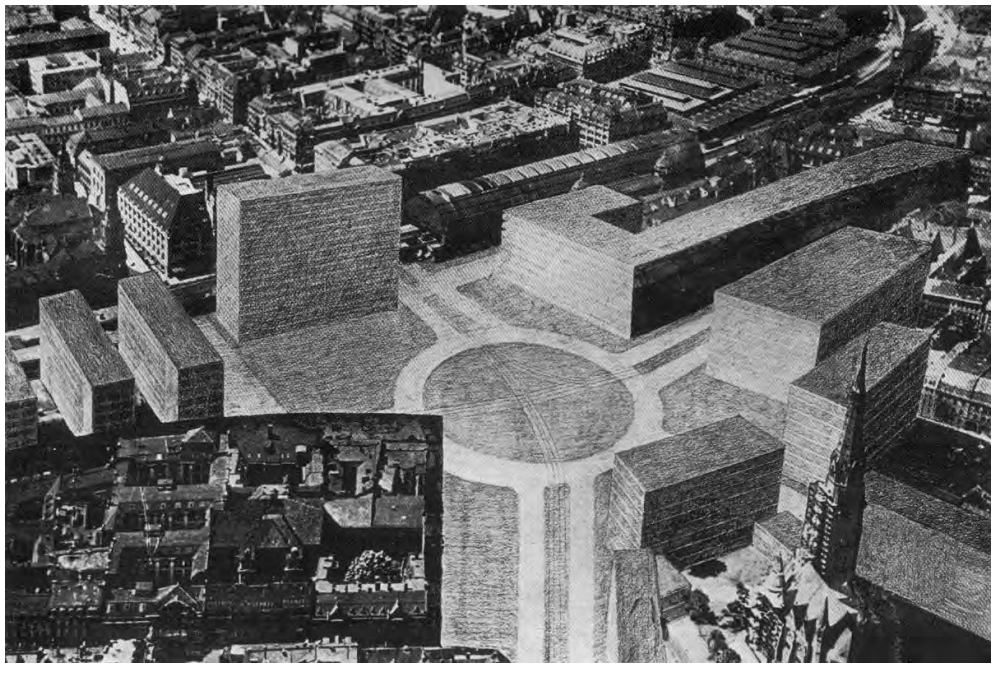

Fig. 8: Hans and Wassili Luckhardt, *Alexanderplatz competition*, 1929, photograph of model. Source: *Die Form* no. 6 (1929): 131.

Fig. 9: Ludwig Mies van der Rohe, *Alexanderplatz competition*, 1929, photomontage. Source: *Die Form* no. 8 (1929): 211.

The peri-urban roundabout might just be the blind spot of the all-pervading neoliberal spatial regime of control. It is a last refuge for those outside of the reigning systems of representation and power. The fact that roundabouts usually either remain empty or are decorated with either pop-cultural trivialities or well-intentioned exemplars of public art attests to the impossibility of integrating this infrastructural device into a conventional production of symbolic meaning. It is maybe for this reason that the official guidelines by the French *Ministère de l'Équipement* concerning the design of the circular space of the roundabout remain rather vague. The traffic island should receive a 'landscape and architecture treatment' and should be inserted into the 'urban landscape'.[43] Among countless decorative installations with varying degrees of artistic ambition, installations that treat the specificity of the peri-urban head on are rare. *Rotating House* (2008) by the artist and architect John Körmeling is an exception. It presents a replica of a typical Dutch row house on a roundabout outside the city of Tilburg. [Fig. 11] Placed on tracks, it circles around the roundabout every twenty hours, prompting an effect of estrangement in drivers seeing the house at changing locations.

Hence, what draws the *gilets jaunes* to the traffic circles? One possible explanation might just be that traditional symbolic representations and attempts to affirm political agency by entering discursive fields in codified practices of contention (like joining political parties, participating in an organised demonstration, engaging in acts of disobedience, writing op-ed pieces) seem to fail in late capitalism. The threat to the established order no longer resides in inscribing oneself in or altering the symbolic order. Rather, as Éric Alonzo suggests, the menace to the contemporary para-urban order consists in disrupting the flux of its fragmented infrastructural networks.[44] Power is no longer expressed and executed by 'putting things in place' through acts of naming, ordering, or displacing. Power in today's decentring urban world is condensed in roundabouts as media that function as the nodes for managing the movement of people and goods. Occupying the centre now means displaying their bodies in the empty void of these nodes that defy representation.

Then again, the protest of the *gilets jaunes* were rarely about blocking the flow of traffic as Weizman and Alonzo suggest. Rather, their actions rendered visible and re-defined the urban episteme of the roundabout. We become aware that they are media that delimit the field of what can be seen or imagined to certain kinds of urban perceptions and political actions. Or, following the terminology introduced by Jacques Rancière, the programmatic and spatial void of the roundabout demonstrations challenges the 'police' assigning the individual to classes, functions, identities and liberating 'politics' in the sense of the irruption of a voice exceeding all communitarian rooting.[45] The voices of the *gilets jaunes* – epitomised by the generic safety jacket that affirms the affiliation to a uniform collective – institute what Rancière calls '*la part des sans-parts*', the partaking of those outside of the dominant social and symbolic orders who refuse representation and identification.

The plebs of the *rond-point*, 'those who have no part' enter not only the political/peri-urban stage to be counted as equals. They also remind the dominant public of the old urban centres that they still exist. In addition, more importantly, by occupying the peri-urban traffic circles, by claiming new sites of conflict, they expose the roundabout as one of today's sophisticated media for managing potential conflicts in order to guarantee the smooth flow of transactions. Yet once we understand the roundabout beyond being a functional device for traffic management as medium it gains agency to reframe the ways in which both the political and the urban can be known, experienced, and built. It is 'a piece of a material complex that is both a way of knowing the world and a thing to be known in its own right'.[46]

Fig. 10

Fig. 11

Fig. 10: *Gilets jaunes*; photo: www.lechorepublicain.fr, 7 December 2018.

Fig. 11: John Körmeling, *Rotating House*, installation, Tilburg, 2008. Photo: Gerda van de Glind.

In the midst of the roundabout – the urban apparatus par excellence to prevent collisions – the *gilets jaunes* affirm the persistence of the political and the necessity of spaces of contention. They remind architects and urban planners that the link between the demos and the polis lives on yet emerges in surprising places. Architecture must assist in enabling people to partake in a socially distributed sensuality. Even if too early or too late, the people still claim their part in the polis.

Notes

1. Laurent Jeanpierre, *In Girum: les lecons politiques des rond-points* (Paris: La Découverte, 2019), 97–98. Marc Augé, for instance, identified the roundabout as 'a revenge of the local'. Marc Augé, 'Roundabouts: The Revenge of the Local', in *City A-Z*, ed. Nigel Thrift and Steve Pile (London: Routledge, 2000), 206–7.
2. Reinhold Martin, *Mediators: Aesthetics, Politics, and the City* (Minneapolis: University of Minnesota Press, 2014), viii.
3. Cited in Elke Marhöfer and Mikhail Lylov, 'A Thousand Cliffs' (Interview with Jean-Marie Straub), in *Der Standpunkt der Aufnahme: Positionen politischer Film- und Videoarbeit,* ed. Tobias Hering (Berlin: Archive Books, 2014), 348.
4. In reaction to the wave of protests by the *Gilets Jaunes* movement, the French President Emmanuel Marcon initiated the *Grand débat national* on 15 January 2019. This orchestrated exercise of direct consultation on a local level was supposed to produce 16 000 *Cahiers de doléances* documenting the political demands of French citizens.
5. Letter from Engels to Kautsky, 20 February 1889, in Friedrich Engels, *Friedrich Engels Briefwechsel mit Karl Kautsky*, ed. Benedikt Kautsky (Vienna: Danubia Verlag, 1955), 233. English-language source: Friedrich Engels and Karl Marx, *Selected Correspondence* (Moscow: Foreign Languages Publishing House, 1953), 482.
6. Maurice Merleau-Ponty, 'Le Cinéma et La Nouvelle Psychologie', in *Sens et Non-Sens* (Paris: Les Éditions Nagel, 1948), 98.
7. Straub quoted in Serge Daney, '*Trop Tôt, Trop Tard* de Jean-Marie Straub et Danièle Huillet', *Libération*, 20 February 1982.
8. Daney, 'Cinemeteorology'. The above-mentioned source translated by Jonathan Rosenbaum and published on his website, 21 March 2018, http://jonathanrosenbaum.net.
9. Letter from Engels to Kautsky, 20 February 1889, in Engels, *Briefwechsel mit Karl Kautsky*, 234. François-Noël Babeuf (1760–1797) was a French revolutionary whose newspaper *Le tribun du peuple* advocated equality, the interests of the poor and the abolition of private property. Babeuf was arrested and executed in 1797.
10. Serge Daney, 'Une Morale de La Perception', in *La Rampe: Cahier Critique 1970–1982* (Paris: Gallimard, 1983), 127.
11. Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction [Second Version]', in *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, ed. Michael W. Jennings, Thomas Y. Levin and Brigit Doherty, trans. Edmund Jephcott et al. (Cambridge MA: Belknap Press, 2008), 27.
12. Ibid., 27.
13. Walter Benjamin, *The Arcades Project*, ed. Rolf Tiedemann, trans. Howard Eiland and Kevin McLaughlin (Cambridge, MA: Harvard University Press, 1999), 867.
14. Gilles Deleuze, *Cinema 2: The Time-Image,* trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 1989), 245.
15. Ibid., 254–55.
16. Mahmoud Hussein, *Class Conflict in Egypt: 1945–1970*, trans. Alfred Ehrenfeld (New York: Monthly Review Press, 1974). See also Celine Condorelli, 'Speaking of Revolutions: Too Early, Too Late: Interview with Jean-Marie Straub and Danièle Huillet', *LUX*, 9 March 2011, https://lux.org.uk. It is worth noting that in an early letter to Kautsky, Engels reflected on

the potential of revolutions to occur in colonised countries such as Egypt. See letter of 12 September 1882. Engels, *Briefwechsel mit Karl Kautsky*, 63.

17. Jacques Rancière in Philippe Lafosse, *L'étrange cas de madame Huillet et monsieur Straub: comédie policière avec Danièle Huillet, Jean-Marie Straub et le public* (Toulouse Ivry-sur-Seine: Ombres À propos, 2007).
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19. Spiro Kostof, *The City Assembled: The Elements of Urban Form through History* (London: Thames and Hudson, 1992), 124.
20. Panu Lehtovuori, *Experience and Conflict : The Production of Urban Space* (Burlington, VT: Ashgate, 2010), 36–40.
21. Éric Alonzo, *Du rond-point au giratoire* (Marseille Lyon: Éd. Parenthèses É. du Certu, 2005), 15–16.
22. Alonzo, *Du rond-point,* 40.
23. Eugène Hénard, *Les Voitures et les passants Carrefours libres et carrefours à giration* (Paris: Librairies Imprimeries Réunies, 1906).
24. Alonzo, *Du rond-point*.
25. Le Corbusier, *Urbanisme* (Paris: G. Crès, 1924), 161, my translation.
26. Le Corbusier, *The City of To-Morrow and Its Planning* (New York: Dover, 1987), 178.
27. Paul Westheim, 'Umgestaltung des Alexanderplatzes', *Bauwelt* no. 13 (1929): 312.
28. Ludwig Hilberseimer, 'Würdigung des Projektes Mies van der Rohe', *Das Neue Berlin* no. 2 (1929): 39–40.
29. Ludwig Mies van der Rohe, unpublished manuscript dated 17 March 1926, included in Fritz Neumeyer, *Mies van der Rohe: Das kunstlose Wort* (Berlin: Siedler, 1986), 315.
30. Wilhelm Lotz, 'Wettbewerb für ein Bürohaus am Hindenburgplatz in Stuttgart', *Die Form* no. 4 (1929): 153.
31. The term *Lichtung* refers to a glade or opening in the forest. Etymologically, it also connotes 'illumination' or 'enlightening', which can be understood as an act of elucidation or loosening up. In Heideggerian thought *Lichtung* does not stand in opposition to the metaphysics of light. Leonardo Amoroso, 'Heideggers "Lichtung" Als "Lucus a (Non) Lucendo"', *Philosophisches Jahrbuch* 90 (1983): 154.
32. Martin Heidegger, *Off the Beaten Track,* trans. and ed. Julian Young and Kenneth Haynes (New York: Cambridge University Press, 2002), 30. 'Diese offene Mitte ist daher nicht vom Seienden umschlossen, sondern die lichtende Mitte selbst umkreist wie das Nichts, das wir kaum kennen, alles Seiende'. Martin Heidegger, *Holzwege* (Frankfurt am Main: Vittorio Klostermann, 1950), 41.
33. Heidegger, *Off the Beaten Track*, 31.
34. Interview with Alain Finkielkraut: 'Macron bezahlt jetzt den Preis für seinen Sieg', *Neue Züricher Zeitung*, 1 February 2019, https://nzz.ch.
35. Patrick Brasart, *Paroles de la Révolution: Les Assemblées parlementaires, 1789–1794* (Paris: Minerve, 1988). Cited in Marcel Detienne, 'Public Space and Political Economy in Early Greek Cities', in *Public Space and Democracy*, ed. Marcel Hénaff and Tracy B. Strong (Minneapolis: University of Minnesota Press, 2001), 45.
36. Ibid., 44–45.
37. Ibid., 51.
38. David Graeber, 'Occupy Wallstreet's Anarchist Roots', in *The Occupy Handbook*, ed. Janet Byrne and Robin Wells (New York: Back Bay Books, 2012), 141–49.
39. Eyal Weizman, *The Roundabout Revolutions* (Berlin: Sternberg Press, 2015).
40. Ibid., 12.
41. Laëtitia Riss, '"Le mouvement des Gilets Jaunes a permis d'être un peu moins malheureux" – Entretien avec Laurent Jeanpierre', *Le Vent Se Lève* (blog), 26 January 2020, https://lvsl.fr.
42. Benjamin, *The Arcades Project,* 769.
43. Éric Alonzo, *Du rond-point,* 109–10.
44. Ibid.
45. Jacques Rancière, *La Mésentente* (Paris: Galilée, 1995).
46. Martin, viii.

Biography

Lutz Robbers holds a PhD in the History and Theory of Architecture from Princeton University. He has taught at the RWTH, Aachen, the Bauhaus University, Weimar, Columbia University and Princeton and has held research positions at the IKKM, Weimar, the London School of Economics's 'Cities Programme' and the German Forum of Art History in Paris. He served as managing editor of the journal *Candide – Journal for Architectural Knowledge*.

Relaying Memory through a Generated Environment: A Critical Recreation of Prisoners' Sense-Perceptions in Khiam Detention Centre

Ahmad Beydoun

Upon reaching the front gate of Khiam Detention Centre (KDC), I was greeted by an old man, Abu Ali, who limped heavily as he moved. He gave me a tour of the site that was half-destroyed by what appeared to have been an aerial bombing. Later on, during our conversation, I learned that the tour guide was himself a former inmate, the current caretaker of the site, and the prison's last inhabitant. Throughout the tour, he actively engaged with the site by recreating scenes of torture as we moved among the remains of the detention centre. The old man took on multiple roles, and his words reverberated in the halls of his former prison. The information he relayed to me was an apt introduction to the site. Soon enough, I became aware of the lack of mobile phone reception on the site. An echo replaced the sound of a phone call, and heavy background noise interfered with the radio signals throughout my exploration in the south of Lebanon. The feeling of being virtually and spatially occupied only increased when I came to realise that the photos I captured using my mobile phone were geotagged 'Israel', despite being physically located over fifteen kilometres from the Israeli border. Not only did the GPS inaccurately position me in Israel, but it falsely identified the coordinates of KDC, implying that the site was practically undetectable. The feeling of isolation and surveillance marked my exploration of the situated, remembered and (de-)mediated site of KDC.

Khiam Detention Centre, a detention camp established by Israel in South Lebanon in 1985, is currently under heavy political interference that aims to manipulate and monopolise the writing of its burdened history. The preservation of the memory of events that took place in this prison needs to be urgently and collectively addressed in the face of the multiple attempts of erasure and biased revisions by both Israel and Hezbollah. Today the site of KDC lies in ruins following the Israeli Air Force bombing during the Summer War of 2006. This military operation is regarded by previous prisoners as an act of tampering with evidence to acquit Israel from accountability. Meanwhile, in Lebanon the history of KDC remains monopolised by Hezbollah, who exerts political dominance over the territory where the prison is situated. Hezbollah intended to inaugurate Khiam Resistance Museum in late 2020 on the site of KDC by adopting the history of the prison as its own. This study surveys three types of media sources that contain the memory of Khiam Detention Centre: 1) interviews conducted with former prisoners regarding their collective memory; 2) the data-archives of a radio programme called *Nahnu Bikhayr Taminuna Ankom* (We are alive, tell us if you are) and 3) the built environment mapped with a sonic device. The extracted memories are then transcluded into a generated environment that virtually relays the mnemonic site of KDC.[1] The contested memories surrounding the site, in parallel to its wrecked physical state, underline the importance of developing an alternative relay that would invite spectators to inhabit the senses of former inmates to better perceive the context of the prison.

This relay is developed in a generated environment that compiles and preserves the experiences of former prisoners with care and self-reflexivity for their wellbeing, PTSD and media exposure. It breaks out of the binaries of realpolitik imposed by the warring factions of US-endorsed far-right Israeli militarism and Iran-backed Hezbollah para-militarism. This article thus outlines the design of the generated environment by introducing the contradictions of prisoner versus visitor experiences within KDC, investigating remnants of torture and surveillance within the built environment of South Lebanon, and describing how the generated environment ultimately aims to transclusively extend memory into a virtually accessible archive.

Background

KDC is notorious for being a place of many forms of draconian violence. During its operation, the detention centre hosted a total of approximately 3 500 inmates.[2] Today, KDC has the appearance of an abandoned ruin, coated in long-lost stories and auras of lost lives. It is semi-operative as a site for curious visitors, without the functioning amenities to be called a tourist destination. [Fig. 1]

KDC was built as barracks for French military personnel, and later put to use by the Lebanese Army as a military base, before it was occupied by an Israeli proxy called the South Lebanese Army in 1985. During its operation as a detention centre for Lebanese and Palestinians, torture techniques were devised and executed to inflict severe pain on inmates. KDC was infamous for detention with indefinite sentences without trial, and for unique physical and mental torture techniques. Such techniques included electric shocks, excessive beatings with electric cables, hanging from the ceiling for hours, exposure to bad weather, deprivation of water, food, sleep and restroom use, handcuffing and head-covering for excessive periods of time, and solitary confinement. The death of an inmate in 1996 warranted the intervention of the International Red Cross, who during the period from 1996 to 2000 introduced several reforms intended to enhance the living conditions of the inmates. There was no documentation kept, no records of prisoners, no arrest warrants or any due judiciary process when incarcerating people. This indicates that the functioning of KDC was closer to a detention camp than to a prison.

The ‘red box’ refers to both a physical structure and a torture technique used against inmates at the whim of their interrogators. Located within solitary cells, a red box measures 50x70x70 centimetres, with an extra 10 cubic centimetres for female inmates. Prisoners were confined in the box for extended durations of time and were given a small amount of food and a pail for excrement. Testimonies about the consequences of confinement in the red box detail the stiffness of limbs which often resulted in reddish skin due to the prolonged exposure to metal. To further exacerbate the suffering of an inmate, guards would regularly thud on the red box using hard objects to send painful reverberations within the box and through the body of the inmate. [Fig. 2]

After the liberation of KDC in 2000, the camp was transformed into a museum by Hezbollah, with the aim of displaying the torture devices and inhumane practices used by the South Lebanese Army.[3] The detention centre operated as a museum until most of the campgrounds were destroyed in the aerial attacks led by Israel. Most of the site’s operational facilities were damaged, leaving only the interrogation rooms, administration offices, and one out of the four prison wings. Some sources suggest that the attack intentionally targeted the KDC in an effort to erase a physical trace that could indict the State of Israel of war crimes.[4] Since 2006, Hezbollah has actively sought to recreate the site as a museum dedicated to Hezbollah resistance in the South. Hezbollah’s reconstruction plan was supposed to be implemented starting in December 2019, but the

Fig. 1

Fig. 2

Fig. 1: An overview of the Khiam Detention Centre in its current form (17 September 2019). Source: author.

Fig. 2: The notorious red box, used to isolate prisoners and torture them through prolonged confinement and sound manipulation via the reverberation caused by guards deliberately banging on the surface. Source: author.

October 17 Revolution (of 2019) and the collapse of the economy deferred the plans until further notice. It could be argued that rewriting the history of KDC using museological techniques supports the geopolitical aspirations of Hezbollah and solidifies its overall political agenda.

Furthermore, on the Southern Lebanese border there is a series of visible Israeli antennae on the mountaintops on the Israeli side and a disguised Hezbollah network on the Lebanese side. The presence of Israel's antenna towers exerts a broader territorial claim which from the Lebanese side is perceived as a visual and electromagnetic occupation. Meanwhile, Hezbollah's invisible network, presumed to be subterranean, feeds into the suspicion and paranoia on the Israeli side. A manifestation of this invisible warfare is the electromagnetic interference that scrambled the metadata of our mobile phones and located us in Israel instead of Khiam. This phenomenon revealed the porosity of the border between Lebanon and Israel which resembles more of a contested buffer zone than a clearly defined line.

Research methodology

The extraction of memory from KDC's media imprints required a mixed qualitative-methods approach to guarantee a reliable transfer of data to the generated environment. This environment hosts an online virtual relay to each of the three media imprints and can be accessed on http://kdctoge.com.

The data used for content development for the generated environment is based on the following three research questions:

1. How do former prisoners preserve their memories of KDC?
2. How does the surveillance contribute to the politics of erasure?
3. What are the prisoners' opinions and suggestions for the virtual reconstruction of KDC?

In order to explore these questions, data was collected via semi-structured interviews, content analyses, and fieldwork designed to 'extract' the memory from, respectively, former prisoners, data-archives, and the KDC's physical remains.

The collective memory of the former prisoners – and now witnesses – coming from different social backgrounds, with different political affiliations, religious associations, genders, and physical abilities, was accessed through a series of semi-structured interviews. A total of nine interviews was conducted with two women and seven men. The political backgrounds of the witnesses included the Lebanese Communist Party, Hezbollah, Palestinian Liberation Organisation, and non-affiliated citizens of the South. Interviews consisted of thirteen questions and spanned between twenty minutes and an hour. These prisoners were asked to identify their connection to the prison by reflecting on their time in detention, in juxtaposition to the current state of the camp as a ruin. Interviews were designed to grasp the collective experiences that continue to resonate with former prisoners, while also exploring the impact of applied reconstruction on their connection with the site.

Various content that communicates the relationship between space, sound, surveillance, and memory was collected and used to further contextualise the digitised memory archive dedicated to KDC. The aforementioned radio-programme *Nahnu Bikhayr Taminuna Ankom* was a useful source for unearthing communication tactics between prisoners and non-prisoners. Hosted by Sawtul Sha'ab, (The Voice of the People) beginning in the 1980s, this radio channel served as a platform where family and friends were able to get familiar with the living conditions of the prisoners. The memory of KDC that is stored within this programme's archives, was accessed after receiving consent from the radio hosts to compile and reproduce the data for the purposes of the generated environment.

Lastly, the memory stored in the built environment of KDC was accessed through data collected from ethnographic and sonic mapping generated within two spatial entities: the physical ruins of KDC and its surrounding electromagnetic field. The ethnographic data collection relied on performing focused observations, whereas data on sound and electromagnetic media was collected through a sonic-sensory device designed to be an audio-recorder, radio-receiver, and transmitter all in one. The device was built with the capacity to receive and transmit audio with a wavelength ranging from 88MHz to 108MHz and has the components of a transmitter, receiver, tuner, antenna, microphone, speaker, and a recorder. [Fig. 3] The aim of this device is to 'translate' the physical elements found in KDC from their solid state into sonic data that can be accessed on the generated environment. The interplay of sound and space was tested on the red box by following a technique developed by Alvin Lucier in his art piece *I am sitting in a room*.[5] The microphone and the speaker were placed on opposing sides of the red box's interior to capture how sound travelled within the confined space. The result of this experiment is the production of a sonic representation of the red box. Theoretically, it would have been compelling to broadcast the sonic recordings collected by the device from within KDC. The aim would be to transform KDC into a broadcasting infrastructure in the midst of the occupied electromagnetic territory. Unfortunately, this would not have been possible due to security concerns and the worry about possible legal repercussions. The data collected from within the red box was later extracted and uploaded to the generated environment platform. To summarise, through the techniques described above, the study engaged in raw data collection that is used to translate the memory of KDC, extracted from various sources, into a new information-generated environment.[6]

The outline of the generated environment consists of a virtual relay of the three media imprints that contain the memory of KDC. First, the collective memory of the previous prisoners was assimilated to distinguish the social production versus the social construction of space. Secondly, the content of the aforementioned radio programme was analysed to expose a type of torture that operates through friction. Lastly, the sonic mapping of the built environment was used to translate memory associated with physical matter to data.

Social production versus social construction of space

I will analyse the space of Khiam Detention Centre through Setha Low's theories of social production and social construction. The materialist emphasis on social production is useful in defining the historical emergence and political economic formation of urban space, while social construction refers to the transformation of space through language, social interaction, memory, representation, behaviour and use into scenes and actions that convey meaning.[7] Through a social production lens, KDC is analysed based on the political, social, and historical motives of its planning and development, thus exposing how a place came into existence by emphasising the material aspects. Concurrently, the social construction lens exposes the role of social interaction, imaginings, feelings, and memories of the people who inhabited the space of KDC which give form and meaning to the physical space. A social construction conceptual frame assumes that place is an abstraction – not a set of physical properties – made up of shared understandings and social structural differences such as race, class and gender.[8]

The activity of the social production of space occurs on the grounds of the built environment, whereas that of the social construction of space occurs within the abstract realm of the human mind. This reality renders the built environment of KDC a vulnerable target to political actors that seek to manipulate the historical and political background

of the prison. The proposed reconstruction plan of KDC set forth by Hezbollah imposes a narrative that erases the presence of other political factions that were involved in the resistance against Israel. At the same time, the Israeli attempt to erase material evidence of local history can be read as another intervention in the social production of KDC's space. This has resulted in a contested memory of the prison among the general public who have no further information other than the revisionist histories of both Hezbollah and Israel. As both political actors engage with acts of erasure and revision to influence the social production of KDC, the social construction of its space remains intact, because its main activity occurs in the minds of the prisoners. The political actors seem to be speculating on the passing of time until the social construction – defined by the interactions and memories of prisoners – fades away alongside the bodies of the prisoners. Eventually, the only surviving memory would be a modified version of KDC's material setting. The urgency of preserving the social construction of space hence becomes essential to combat the political actors' manoeuvres on the social production of the prison's space.

Furthermore, in the theoretical framework of social construction I will draw on the work of Michael Richardson.[9] He emphasises an individualistic perspective of how people transform their experience into symbols, gestures, and figures. Through these symbolic transformations, human experience and feelings become directly attached to elements of the material setting and give meaning to the space. This was the case with the former prisoners when they were prompted to describe the memory of their prison cells, detailing the distinction between the social production of the cell and the symbolic representation of its space. The former is a physical setting within the built environment where an activity or an object is located. The prisoners objectively described the material setting of their cell – its dimensions, form, colour, and furniture. The social construction, on the other hand, is the symbolic representation of the cell as conceived by the prisoners. They each individually constructed their own perception of space that expanded beyond the physical confinements of their cell, as mediated by socio-political processes of control, conflict, and exchange with their environment. They had a defined axis of movement that encompassed their cell, the shower, and on occasions, the sun-room. Hence, the prisoners grew accustomed to loss of sight and an enhanced sense of sound – in adaptation to their prolonged exposure to darkness – and used their restricted senses as a tool for communication to manipulate the physical boundaries of the cell to a nexus of scenes and actions reproduced from interactions between sound and material space. Such interactions include: synchronised banging on walls as a method of communication with adjacent cells, anticipating the guard's purpose of visit based on the speed of their footsteps, and associating the recurrent sound of a helicopter passing overhead with a specific time of day: 11:30 am. These examples indicate the construction of space through sound, as relayed from the memories of the prisoners. The space constructed by the prisoners, and the perception and experience of that space, contracts and expands in relation to a person's emotions and state of mind, sense of self, social relations and cultural predispositions. Hence, the prisoners socially constructed and communicated local meanings through symbolic forms by appropriating space based on their needs.

Translation into the generated environment under Virtual Relay 01

The distinction between the social production and social construction of space was essential to locate the exact grounds where political actors operate. Hezbollah's reconstruction scheme targets the social production of KDC by remodelling its material setting, and the social construction by selecting prisoners that were affiliated with their party to relay their experiences. Among the prisoners I

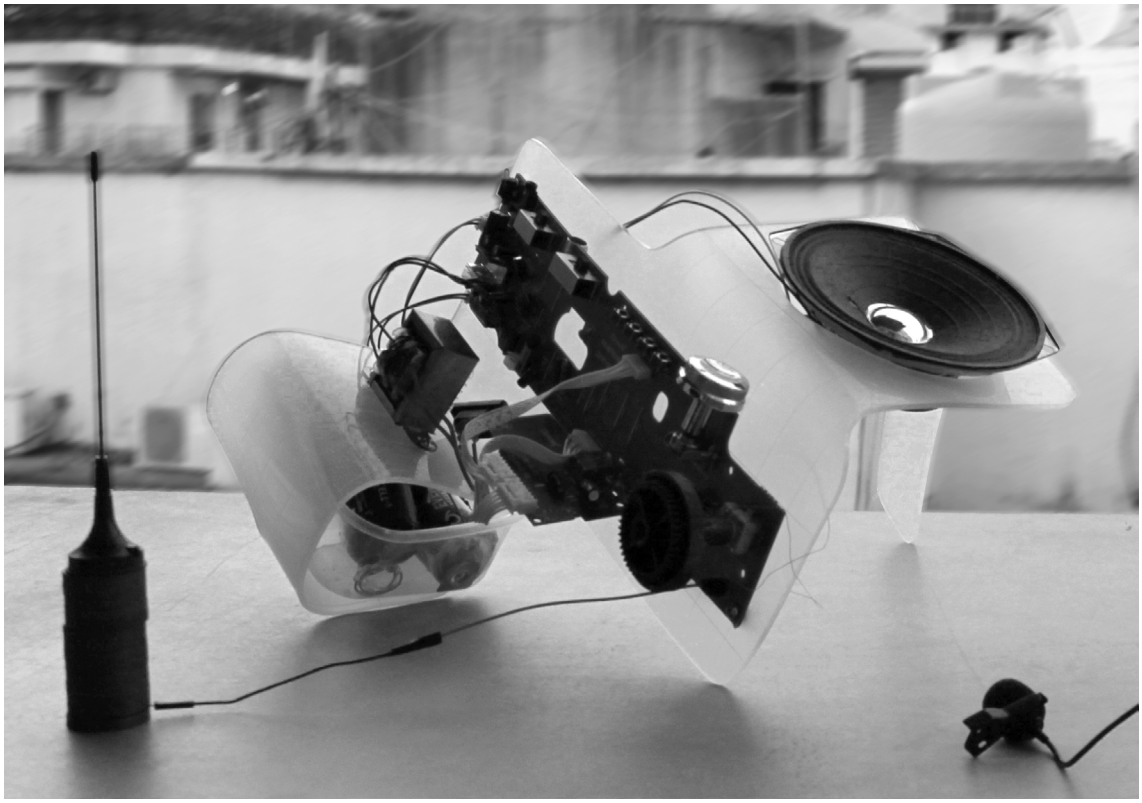

Fig. 3: The sonic-sensory device used for data collection in the field. Source: author.

interviewed, only the ones close to Hezbollah knew about the existence of a reconstruction plan. Tony Bennett, author of *The Birth of the Museum*, explains how a museum has two distinctive political demands: 'the demand that there should be parity of representation for all groups and cultures within the collecting, exhibition and conservation activities of museums, and the demand that the members of all social groups should have equal practical as well theoretical rights of access to museums'.[10] The first political demand is deliberately overlooked in the Khiam Resistance Museum because the inclusion of other political factions who resisted the Israeli occupation would weaken Hezbollah's exclusive appropriation of resistance. However, the second demand is purposefully articulated by the party to address the sensorial and emotional experience of visitors of all nationalities, religions, and political backgrounds. Hezbollah's growing interest in museums as propaganda/media tools is seen as a way to strengthen the sense of belonging between members of their own community and an opportunity to 'enlighten' outsiders. The investigation of interventions on the built environment of KDC that affect the social production of space is beyond the capacity of this research due to the contested position of the camp. Therefore the focus of this paper is on the social construction of KDC as relayed by the former prisoners.

Furthermore, the dichotomies of visitor experience and prisoner experience are coupled with the dichotomy of the social production and social construction of space to underline the significance of both in the embodied experience of KDC. Visitors would experience the social production of space as manifested in its built structure, and the social construction of space as relayed by Hezbollah prisoners. Through the generated environment's Virtual Relay 01, visitors will be able to experience the space by going for a virtual walk through the 3D model of KDC prior to the Israeli attack and prior to the Hezbollah reconstruction plan.[11] According to social anthropologist Hilda Kuper, some sites have flexible spatial and symbolic qualities but with no fixed relationship to the physical environment, and are only activated by human intervention.[12] The material setting transforms into a social construct upon the layering of phenomenological experiences dependent on the sensory testimony of former prisoners. This would allow the social construction of space to transgress its confinement in the role of a prisoner to that of a visitor through the use of the generated environment. The collective social constructs that were imagined by the prisoners during incarceration are personified in Virtual Relay 01 as an interactive mesh surface that is suspended in space and time. It is designed to challenge the visitor's freedom of mobility by limiting their visual awareness. Visitors are able to explore the temporality of the prisoners' setting by overlaying their navigation with the prisoner's narration of their struggles to comprehend sound, vision, and space. This allows the visitor to experience a recreation of a prisoner's sense of space. Experiencing KDC through the lens of the social construction and social production of space emphasises the value of both realities. A mediation between the two sets of realities achieves a virtual perception where both experiences can exist simultaneously. The significance of this storage medium lies in its ability to visualise the correlation between sound and space, where sound determines the limitations of the visitor's vision. [Fig. 4]

Torture through friction

That sound perception was an inmate's greatest sensory strength also meant that sound manipulation was a powerful tool mobilised by guards and interrogators to torment prisoners. It was common practice for guards to bang against prison cell doors as they walked past, and place steel buckets over prisoners' heads while hitting against them with batons. Female prisoners recounted the humiliation

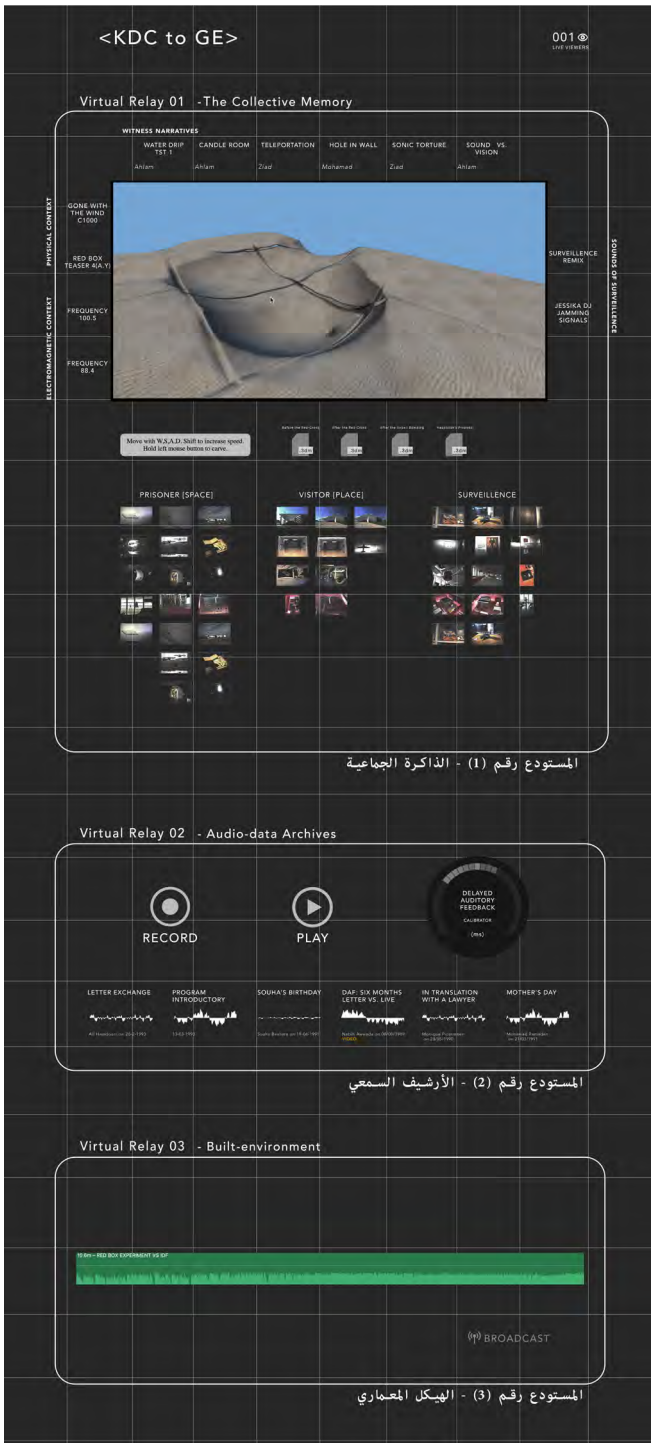

Fig. 4: An overview of the content located on the generated environment. Storage Medium 01, December 2019, http://kdctoge.com. Source: author.

they experienced being forced to listen guards urinating in their vicinity as they were blindfolded and handcuffed. Sound manipulation was often used by interrogators to extract information from the prisoners. Often, sounds of women screaming hysterically in the room next door were used to convince inmates that it was their mothers, sisters, wives, or daughters who were being tortured in the adjacent room. This technique of torture was applied to weaken the prisoner's internal strength and perseverance, directly attack the emotional resistance of inmates, and persuade them to reveal any information they may have.

Many former prisoners reflect on how the manipulation of sound during their incarceration has been transferred into their daily lives, the experienced symptoms resembling those of PTSD. Everyday rhythmic sounds such as the pulsing sound of a machine or even the recurrent tapping of fingers on a table re-situate former prisoners into the space of KDC. However, this does not mean that former prisoners are the only victims of sound manipulation as a method of torture. Rather, sound has also been instrumentalised by Israeli soldiers for surveillance purposes outside the borders of KDC. Prior to 2000, the IDF practiced various forms of intimidation against Lebanese and Palestinian populations by tapping into or mass-calling landline phones. The messages consisted of subliminal invitations for recruitment, warnings of upcoming attacks, or 'awareness' campaigns relaying the repercussions of cooperating with Hezbollah against Israel. Herein, the sound infrastructure is used as an extension of state control beyond national borders by imposing a sonic 'dialogue' with the inhabitants of another state. The sense of being monitored is a subliminal effect of the recording, whereby those who receive the message assume that they are under surveillance by the Israeli state. The relationship between power and sound is then consolidated through surveillance tactics that mobilise sonic outlets to demonstrate power over a territory or population. The tactic leaves the victims docile to surveillance, enclosure, and subjugation within a given space.[13]

This passage is a sample of a common 'awareness' campaign sent by the Israeli state to affected populations in Lebanon. It was distributed by mass calling Lebanese phones or by dropping leaflets from military planes (see figure 5 for a sample of an awareness campaign communicated via leaflet). The following is a translation of a quote from a leaflet in Arabic:

> This is the Israeli Army. To the residents of Lebanon: the Israeli Army will expand its operations in Lebanon against the continuing terrorism of Hezbollah, in defence of the citizens of the state of Israel.
>
> For the sake of your own safety, and because we wish not to harm any civilians that are not implicated, you must keep away from the locations where Hezbollah is present and acting against the State of Israel.

One of Foucault's best-known discussions regards the structure of the panopticon in *Discipline and Punish,* where the concept is deployed as a political tool to induce a state of self-consciousness and a sense of permanent visibility in inmates, to assure the automatic functioning of power.[14] The former prisoners and current witnesses who live in South Lebanon still experience this sense of 'permanent visibility' even after being physically removed from the KDC.

Surveillance aims to extend the occupation of the electromagnetic field by the political actors in South Lebanon, while having a damaging effect on the livelihood of citizens and especially witnesses. In their testimonies, former prisoners speak of everyday terror, recounting their awareness of Israel's presence. One of the witnesses reveals the extent to which the buzzing sound of Israeli drones

اعلان لسكان قرى الجنوب

نظرا لتزايد النشاط الارهابي واطلاق الصواريخ من منطقة الجنوب عبر اسرائيل ، سيقوم جيش الدفاع الاسرائيلي باقصى ما يمكن للحدّ من هذا النشاط .

الهدوء يجب ان يسود على جانبي الحدود .

ايها المواطنون !

اذا اردتم ان تمارسوا حياتكم بهدوء فعليكم الامتناع عن تقديم اية مساعدة للقائمين بالاعمال الارهابية او للذين يحاولونهم وان تتعهدوا كذلك بالّا يقوم الارهابيون بأي نشاط في منطقتكم .

امتنعوا عن جعل مساكنكم اوكارا ارهابية ضد اسرائيل ، ذلك ان الثمن سيكون باهظا جدا لجميعكم ولكل منكم على انفراد .

بيدكم منع الدمار والموت .

وقد اعذر من انذر !

قائد قوات جيش الدفاع الاسرائيلي في الشمال

Fig. 5: Israeli leaflet announcing future aggression against a target area; 13 July 2006. Source: http://psywarrior.com.

can be heard, suggesting continued surveillance despite the physical border between Lebanon and Israel. He works as an excavator for a water-well company and described how, while digging the wells, the high-pitched buzzing of an Israeli drone can be heard overhead. The awareness of being observed during his routine excavations by Israel has been normalised – not through the sight of the drone, but rather through the sound that the device makes. The feeling of being surveilled is thus located within the sonic vibrations sensed by the population. Sounds of fighter jets are audible as well and identified, in contrast to the drones, by the low-pitched rumbling sound heard from above. Susan Schuppli, a researcher interested in examining material evidence from war and conflict, discusses how sounds produced by drones or jets is a manifestation of military presence that is experienced as a sonic threat in which invisible sound frequencies are converted into states of anxiety, depression, and fear.[15] Acoustics are undoubtedly part of the arsenal of military operations and have been used for centuries to obtain advantage in warfare. Such brazen breaches of the Lebanese border and its sovereignty suggest the expansion and contraction of virtual borders separating Lebanon from Israel, whereby the physical border is constantly violated and holds no actual power.

Translation into the generated environment under Virtual Relay 02

These new realities have produced an extra-territory along the Lebanese side of the border. It manifests as a buffer-zone or an off-grid territory where concepts of privacy, control and freedom of speech are subjected to permanent contestation. One of the most remarkable features challenging the sovereignty of Lebanon over its territory is the inability to contact the Lebanese police hotline (112) from within. In fact, a call to 112 from this territory is answered by Israeli police. This electromagnetic occupation has been the norm well before the installation of KDC as a detention centre in 1985. Other characteristics further corroborate the omniscience of the dominant political actors who operate the surveillance infrastructure. From within the off-grid territory, the radio show *Nahnu Bikhayr Taminuna Ankom* began broadcasting in 1983 to counter the surveillance of the communication system by innovating a new method that would connect the prisoners with their families. The radio show acted as a media tool to facilitate the transmission of live messages coming from the prisoners' families and letters coming from within the prison. The prohibition of radios in KDC before the arrival of the Red Cross in 1996 rendered the radio show redundant. To combat such restrictions, messages were smuggled to the prisoners either verbally or by the sounds of the guard's radios echoing in the corridors. Nabih Awada, a former communist Lebanese fighter imprisoned in Israel's Askalan Prison for ten years, recounted how prisoners usually communicated by smuggling letters. He explained how prisoners developed a secret writing called *msamsameh*, derived from the wordplay on *semsum* ('sesame seed'), alluding to the miniscule size of the writing. The letters are wrapped in plastic to become a sealed capsule, then passed in kisses or swallowed, excreted and cleaned, and finally delivered.[16] Families and friends wishing to communicate with prisoners equally struggled to bring information into the prison. This difficulty increased the importance of the radio show *Nahnu Bikhayr Taminuna Ankom* as a tool to facilitate basic communication. Unfortunately, because of the time-gap between the live broadcast and the reply from within the prison, messages often took months to be delivered. The complicated nature of the procedure often caused a discrepancy between the question asked by the family and the answers sent back by the prisoner. This discrepancy could be easily identified while listening to the montaged conversations in the archived episodes.

These limitations in communication are reflected in the generated environment in the form of a speech simulation under Virtual Relay 02, featuring delayed auditory feedback. Visitors are instructed to talk into their microphones and then have the choice to calibrate the speed at which their recording is played back to them. Through this storage medium, users are also able to manipulate the pitch at which their recording is rerun. This feature is designed to emulate the style of communication between prisoners and the world outside KDC. The delayed auditory feedback extends the time between speech and auditory perception. Despite being used as a treatment for people who suffer from speech difficulties, the implementation of a 175-millisecond delay has been shown to induce mental stress.[17] As another option in this simulation, visitors are able to listen to selected episodes of *Nahnu Bikhayr Taminuna Ankom*, also with a delayed auditory feedback feature. This allows users to experience the communication process of former prisoners through an interactive reproduction. The tension caused by the delay between the questions asked by the families and the answers sent back by the prisoner is presented in the storage medium through the introduction of glitches into the clean recording of the visitor. By doing so, the simulation attempts to evoke feelings of anxiety and tense waiting through a disruption of the speakers' verbal capacity.

Memory conversion: matter to data

The reconstruction proposal of KDC put forth by Hezbollah was widely criticised by the majority of the witnesses participating in the study. According to Abu Ali, the caretaker of KDC, the proposal aims to bring forth the rebirth of the site through the reconstruction of two out of three demolished prison wings, maintain the third in its state of destruction, and keep the fourth wing in the current intact state. According to the witnesses' testimonies, new building materials would seem inauthentic to the original structure, which would make the restored site seem either like a new prison or a counterfeit. Hezbollah deliberately maintained the third wing in its ruinous state as a testament to Israel's attack in 2006. Similar museological tactics have been deployed at the Mleeta Resistance Tourist Landmark, inaugurated in 2010, which is located on a strategic mountaintop where Hezbollah fought Israel during the Israeli occupation of South Lebanon.[18] Here Hezbollah generated a user experience that blurs the dichotomy between a visitor and a fighter within a politically constructed narrative. It is reasonable to expect that the themes of commemoration, memorialisation, and resistance visible in Mleeta will be reiterated in Khiam. Consolidating the site of KDC as their own, Hezbollah thus effectively legitimises their presence as a non-state player valued for its political, social, and cultural roles.

Hezbollah's proposal for the Khiam Resistance Museum is based on a single route that guides visitors from one area of the detention centre to the next. The experience of the visitor begins in a panorama room, a new structure near the front gate of the camp that hosts an audio-visual montage portraying the significance of the site according to an official Hezbollah narrative. After that, the visitors are guided throughout the masterplan from one prison wing to the other where various artefacts are displayed, mostly prisoners' inventions made in detention and some personal belongings of the SLA guards. In the courtyard area there are Katyushas (Russian rocket launchers) pointing towards Israel, and also military gear, weapons, and tools belonging to the Israeli Defence Force that are displayed as spoils of war. The distinction between the historic site and Hezbollah manipulation is blurred as both aspects are juxtaposed with dogmatic fantasy. In the final stop of the journey, a gift shop and an exhibition room occupy the spaces that were previously used as dormitories for the guards. A selection of the gift shop's inventory includes Hezbollah, Iranian and Lebanese flags, bullet-shaped lighters, Kalashnikov

necklaces, and a DVD of a movie that was filmed of KDC on Liberation Day.[19] The exhibition room, which is the final stop, is designed as a replica of the 'salon' where Hassan Nasrallah, the leader of Hezbollah, usually meets guests. In the same room there is a 3D model of Hezbollah's Khiam Museum displayed in a glass vitrine that reflects the portraits of Iranian supreme leaders hanging from the wall. [Fig. 6] A multisensory experience that encompasses an audio-visual production, an architectural promenade, and a display of a selection of props and artefacts, is part of Hezbollah's strategy to display both the built environment of KDC and its own political agenda in a carefully-designed narrative.

Translation into the generated environment under Virtual Relay 03

Complaints regarding the reconstruction proposed by Hezbollah are prevalent among former prisoners of KDC who fear the erasure of their own experiences through the production of an inauthentic space that prioritises the experiences of Hezbollah prisoners while disregarding all others. The insistence on keeping the site in its original form reflects the understanding of former prisoners that their memories and emotional scars are manifested in the ruins of KDC. Inscriptions on prison cell walls that include scratched names, tally marks counting the days spent inside, or even marks of blood indicating torture, would all be erased with the proposed reconstruction of the site. Some prisoners interested in the reconstruction suggested alternative methods to restore KDC, such as through the recreation of the sensations that were experienced by inmates. For example, in an attempt to recreate the smells of KDC, a former prisoner proposed enclosing the camp in a dome-like structure that would control environmental factors within. The indoor atmosphere would then be fine-tuned to adequately recreate the environmental conditions present at the time of the prison's operation. This intervention would help simulate the odours endured by former prisoners, creating conditions for a faithful transfer of experience from the prisoner to the visitor.

Similarly, in an attempt to preserve the sensual experiences of the camp, generated environment relays the memory stored in the built environment by transforming physical matter to sonic data. The idea stems from the sense of urgency of preserving the physical structure of KDC against proposed alterations that might affect the associated memory. This is achieved by generating a sonic representation of the spatial element which is then made available on the generated environment in an accessible format for online users. Due to its popularity as a torture-tool, I chose the red box as the element for the translation of the material setting into audible data, with the idea to recreate the atmosphere of the red box's interior space. In a similar fashion to Alvin Lucier's *I am sitting in a room* sound-art piece, I placed the microphone and the speaker on opposing sides of the red box's interior.[20] The experiment is to play the recording of the aforementioned automated message by the IDF into the red box, which is then re-recorded to capture the resonance of the sounds echoed within. The new recording is in turn played back and re-recorded. This process is repeated several times with the aim of morphing the original sound. The specific resonance pertaining to each space (such as size, furnishing, and material) affects sound frequencies as they resonate on the interior layout of the red box. Eventually the words become unintelligible and are replaced by the muffled harmonies and tones of the box itself. Through the conversion from speech modules into the materiality of the red box, the essence of the prisoner's experience is transformed into readable data that may be experienced from the generated environment. Instead of Hezbollah's intention to mould the visitor's experience in accordance with their political narrative, Storage Medium 03 provides visitors an 'untouched' version of KDC's built setting, presented in a different physical state.[21] The generated environment therefore does

Fig. 6: A model of the reconstruction plan proposed by Hezbollah, on display in KDC. Reflected on the model are the portraits of prominent Hezbollah and Iranian figures, including the portrait of young Hassan Nasrallah on the left. Source: author.

not meddle with the current built structure of KDC but it seeks to preserve it – in a sonic state – before further damage or construction takes place.

The structure and planned impact of the generated environment

The generated environment reproduces sense-experiences of former prisoners through the manipulation of sound and vision. It is a digital simulation of prisoner experiences through different media sources and imprints that invite spectators to inhabit the senses of former inmates to better perceive the context of the camp. Through transcluding memory from the three media sources and storage space, the generated environment allows site-users to play with the limitations and imposition of sound, allowing the critical recreation of the site without jeopardising the integrity of the current built environment of KDC. As previously shown, the site of KDC and its electromagnetic field have been occupied by both Israel and Hezbollah, so that the claims of sovereignty of its territory and technological infrastructure are tenuous and rife with the risk of political manipulation. This made the World Wide Web a provisionally more inclusive alternate environment to host a virtual relay of KDC. Herein, the generated environment would assert its virtual presence over the coordinates of KDC as an audio-visual manifestation of the social production and construction of space. Thereby, the generated environment runs against the parallel revisionist histories of both Hezbollah and Israel. Currently, the generated environment exists as an audio-visual extension of this article, with the aspiration to become a feature of a proposed digital repository of KDC.[22] The repository will be assembled by urban planners, researchers, archivists, artists, and former prisoners who have already contributed to the online presence of the prison.[23] It will be a collection of knowledge consisting of a wide range of media collected from different sources. The repository aims to become a post-traumatic urban tool used by the affected citizens and the general public as a place of healing and recognition. In its current form, the generated environment's target audience is mainly academics who are exploring this article. However, once it is linked to the repository, it will be accessible to the general public of all ages and from all social backgrounds.

Rather than having an overarching concept or theme to the proposed reconstruction, the generated environment reflects the mundane and everyday life of former prisoners. The current proposal for constructing a KDC museum feeds into utopian speculations present in the contemporary political climate in South Lebanon. Hezbollah's approach is aligned with that of an authoritarian power that relies on monumental architecture to convey the concepts of supremacy, resistance, heroism, and martyrdom. The generated environment learns from the dichotomies of social production versus social construction of space, and also the prisoner versus visitor roles, to produce an alternative narrative that is free (or at least, that is the intention) of any biased manipulation. [Fig. 7]

In a similar instance, the research group Forensic Architecture was commissioned by Amnesty International to establish a digital platform for the notorious Syrian prison Saydnaya, to be presented to the general public and specialised legal international circles as evidentiary material. The project employed aesthetic methods to demonstrate how reality is sensed and presented publicly through the use of an interactive audio-visual exploration.[24] The result is the precise and accurate virtual reconstruction of the material setting of the prison. On the other hand, the generated environment is a virtual manifestation of the experience of prisoners based on their personal perception of space and place. The aim the Saydnaya platform is to hold the Assad Regime accountable for torture and mass executions, as access to the site is restricted. Meanwhile, although KDC's site is currently accessible, its physical presence is not aiding the judiciary

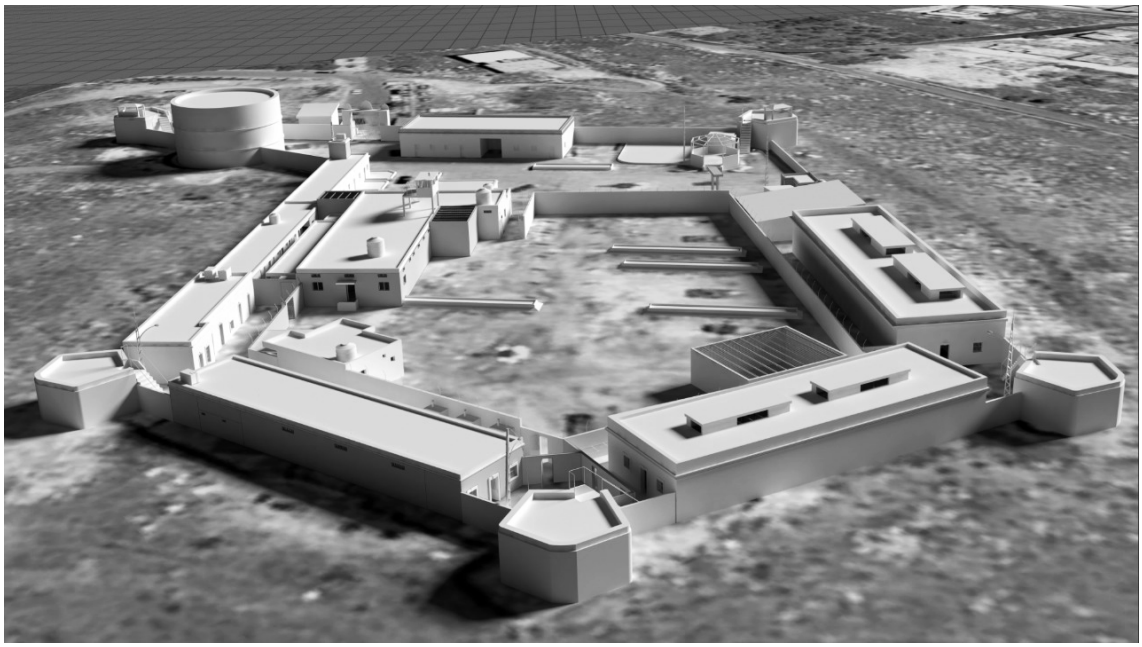

Fig. 7: A computer-generated 3D image of the model of KDC in its operation as a prison. Storage Medium 01, June 2020. http://kdctoge.com. Source: author.

process.[25] Unfortunately, accountability might never be attainable for the caretakers of KDC, regardless of physical evidence and the state of the structure. The generated environment can act as a virtual extension of the site to perpetuate the infamous memory of KDC, and also to help stir public debate towards the protection of human rights.

Conclusion

The preservation of memory and the reproduction of prisoner experience are the main objectives of this project. The effort to relay and recreate the everyday experiences of former prisoners of KDC is exercised in resistance to the political powers that dominate the region of Khiam. The urgency to explore and implement alternative methods of KDC's restoration is directly inspired by the current reconstruction proposals introduced by Hezbollah that aim to transform the site into a partially-reconstructed and partially-preserved museum. In order to thoroughly counter this reconstruction plan with an alternative model, this study combines the compilation of collective memories of KDC, analysis of its physical remains, and perceptions of surveillance in the South Lebanon. Former prisoners, all being against the proposed reconstruction, expressed interest in relaying their experiences and preserving the memory of torture and oppression. Despite Israel's partial destruction of the site in 2006, former prisoners continue to associate their experiences within the rubble, and interpret the bombing as further justification of the urgent need to preserve the memory. These findings, combined with sentiments of resistance to occupation and oppression that are being exercised through aggressive surveillance tactics, have inspired the construction of the generated environment.

The generated environment seeks to run in parallel with and counter to the politically biased narratives that currently dominate the public sphere surrounding KDC. Potentially, the generated environment could be adapted to a museum audio-guide device; however, it does not seek to become an ostentatious museum tool but rather a site exploration device. The generated environment can be appropriated and used as an audio-visual guide to further explore KDC in its virtual state. Regardless of any potential physical intervention on structure, the generated environment would override the built environment by offering users its own, constructed experience. In its current state, the generated environment enables individuals to grapple with restrictions of sight, sound, and mobility similar to those experienced by the former prisoners. Each Virtual Relay featured on the generated environment tackles the conceptualisation of oppression and torture experienced by former prisoners and challenges users' ability to produce their own experiences by limiting their ability to use their senses properly. The generated environment is not a recreation of the physical site of KDC. Rather, it is the reproduction of prisoner experiences that took place during their incarceration, that have come back to recreate a version of the site's history worth remembering.

Notes

1. Transclusion is a term coined by Ted Nelson in his book *Literary Machines* to describe the inclusion of part or all of an electronic document into one or more other documents by hypertext reference. Theodor H. Nelson, *Literary Machines: The report on, and of, project xanadu, concerning word processing, electronic publishing, hypertext, thinkertoys, tomorrow's intellectual revolution, and certain other topics including knowledge, education and freedom* (Swarthmore: T. Nelson, 1987).
2. 'Khiam Detention Centre', *Khiam Detention Centre*. (Khiam: Lebanese Association for Prisoners and Editors, n.d.).
3. Lizzie Porter, 'A Legacy of Torture: Inside Lebanon's Khiam Jail'. Al Jazeera, 14 August 2017, https://aljazeera.com.
4 Joana Hadjithomas and Khalil Joreige, *Khiam*

2000–2007: The Film (Lebanon: Abbout Productions, 2007), Digital video, colour, 103 min., Arabic with English subtitles, password-protected Vimeo link https://vimeo.com.

5. Alvin Lucier, *I Am Sitting in a Room* (Electronic Music Studio at Brandeis University, 1969).
6. The platform can be accessed on http://kdctoge.com.
7. Setha M. Low. 'Towards an anthropological theory of space and place', *Semiotica* 175 (2009): 21–22.
8. Ibid.
9. Miles Richardson, 'Being-in-the-Plaza Versus Being-in-the-Market: Material Culture and the Construction of Social Reality', *American Ethnologist* 9, no. 2 (1982): 421–36.
10. Tony Bennet, *The Birth of the Museum* (London: Routledge, 1995), 9.
11. The 3D model can be downloaded from Storage Medium 01 available at http://kdctoge.com.
12. Hilda Kuper, 'The Language of Sites in the Politics of Space', *American Anthropologist New Series* 74, no. 3 (1972): 411–25.
13 Setha M. Low, ed. *Theorizing the City: The New Urban Anthropology Reader* (New Brunswick: Rutgers University Press, 1999), 113.
14. Michel Foucault, *Discipline and Punish: The Birth of the Prison,* trans. Alan Sheridan (New York: Vintage, 2012), 196.
15. Susan Schuppli, 'Uneasy Listening', in *Forensis: The Architecture of Public Truth*, ed. Forensic Architecture (Berlin, Sternberg Press, 2014), 386.
16. Laura U. Marks, *Hanan Al-Cinema: Affections for the Moving Image* (Cambridge, MAMIT Press, 2015), 79–80.
17. M. Badian, E. Appel, D. Palm, W. Rupp, W. Sittig, and K. Taeuber. 'Standardized Mental Stress in Healthy Volunteers Induced by Delayed Auditory Feedback (DAF)', *European Journal of Clinical Pharmacology* 16, no. 3 (1979): 171–76.
18. Mleeta Resistance Tourist Landmark, Lebanon, https://mleeta.com.
19. On 25 May 2000 the Israeli Army withdrew from South Lebanon and that day is celebrated yearly as Liberation Day in Lebanon.
20. Edward Strickland, *Minimalism: Origins* (Bloomington: Indiana University Press, 1993), 281.
21. Storage Medium 03 can be accessed on http://kdctoge.com.
22. A repository is a central place in which data or knowledge is kept and maintained in an organised way, usually in computer storage, with the ability to selectively extract information from the central storage space and the ability to upload data to it. We should not mistake an archive for a repository, because an archive usually contains knowledge of something obsolete or no longer living, whereas a repository refers to a storage location for data of an entity that is still evolving and growing.
23. Researchers and artists who have investigated different aspects of Khiam Detention Centre include: Zara Fournier, Lara Deeb, Claire Launchbury, Wajdi Mouawad, Joana Hadjithomas, and Khalil Joreige.
24. Eyal Weizman, *Forensic Architecture* (New York: Zone Books, 2017), 94.
25. For example, the director of the camp, Amer Fakhoury, nicknamed 'the butcher of Khiam,' was detained while trying to enter Lebanon in October 2019, but was mysteriously acquitted several months later. He died from late-stage lymphoma in the United States on 18 August 2020.

Biography

Ahmad Beydoun (b. 1994, Beirut) is an architect and researcher who frequently operates in artistic settings. He completed his Bachelor of Architecture at the Lebanese American University and the École Spéciale d'Architecture. He is interested in developing research-based projects around collective memory in situ and in generated environments, critical cartographic and pedagogic practices that resist the carceral continuum in architecture and urbanism. Currently, Ahmad is building a repository for the decaying Khiam Detention Center to publicly perpetuate its infamous memory in the face of recent attempts of erasure and biased revisions of its history. He has previously worked as an architect at DW5 Bernard Khoury Architects where he was involved in a multidisciplinary range of work from research projects, to concept discussions, to the illustration and production of digital images and drawings. His research-based projects have been supported by and presented in Technical University of Delft, Art Jameel, Beit Beirut, Hammana Artist House and the internet.

Visual Essay

I will not find this image beautiful I will not find this image beautiful I will not find this image beautiful (An unfinished monument)

Omar Mismar

Stills from *I will not find this image beautiful, I will not find this image beautiful, I will not find this image beautiful (An unfinished monument*), 2015.

Video, 11 hr. 43 min.
Original image courtesy of Hatem Moussa/AP.

During the summer of 2014, I scrolled through the images of the Israeli bombings of Gaza, mesmerised behind the computer screen by their beauty. They were stunning and my engagement with them, so far away from the 'event', was based on purely flat aesthetic grounds—which is uncannily perverse. Attempting to deface the image, I insert the names of the victims of the attack into its script code. Each name typed into the script alters the photograph and leaves its mark. While trying to defile the visual, to escape from the beauty of this violence, a different aesthetic transpires, that of the glitch. With naming the dead, the notion of a monument emerges, reinforced by the sculptural quality of the smoke cloud.

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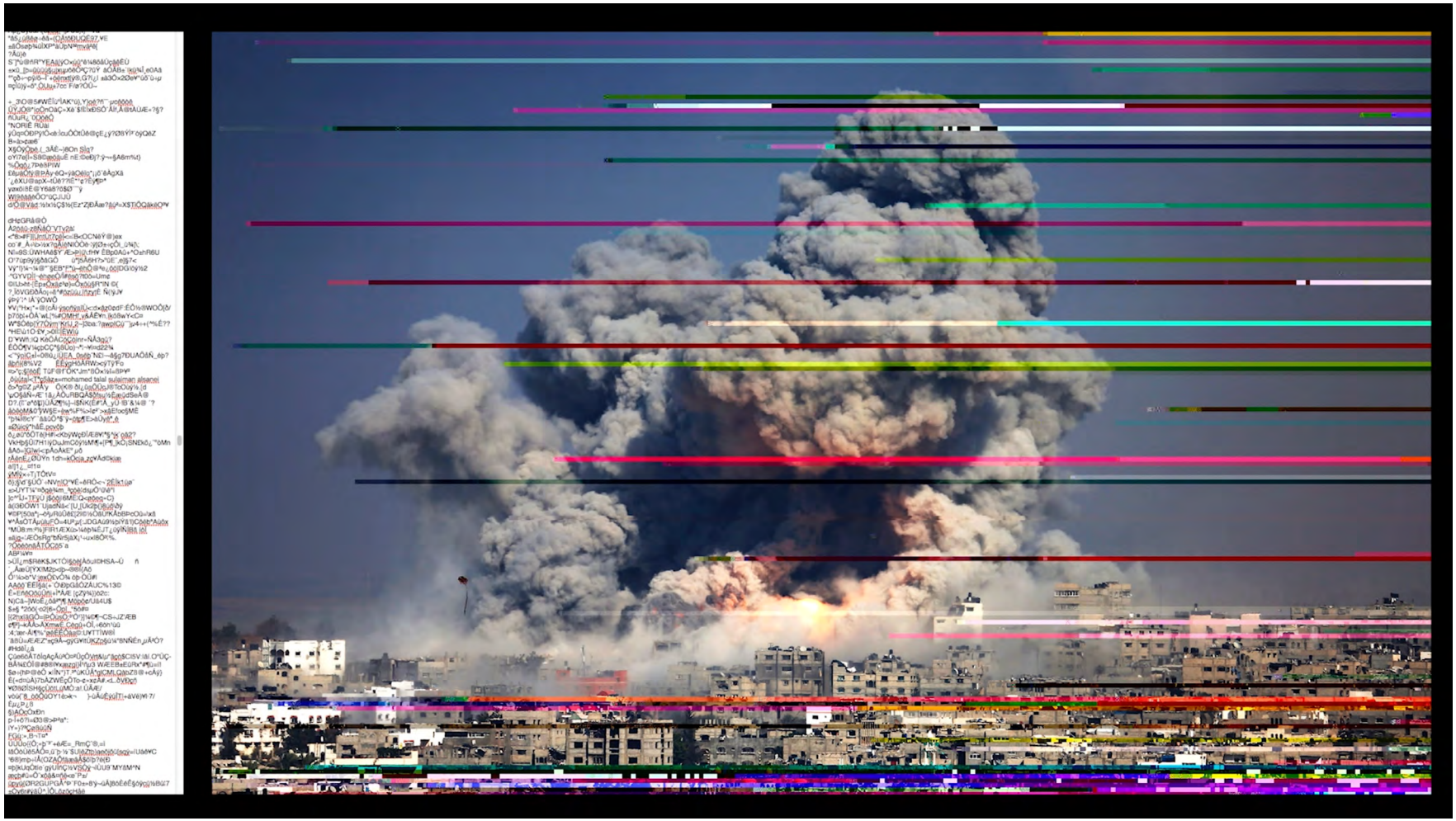

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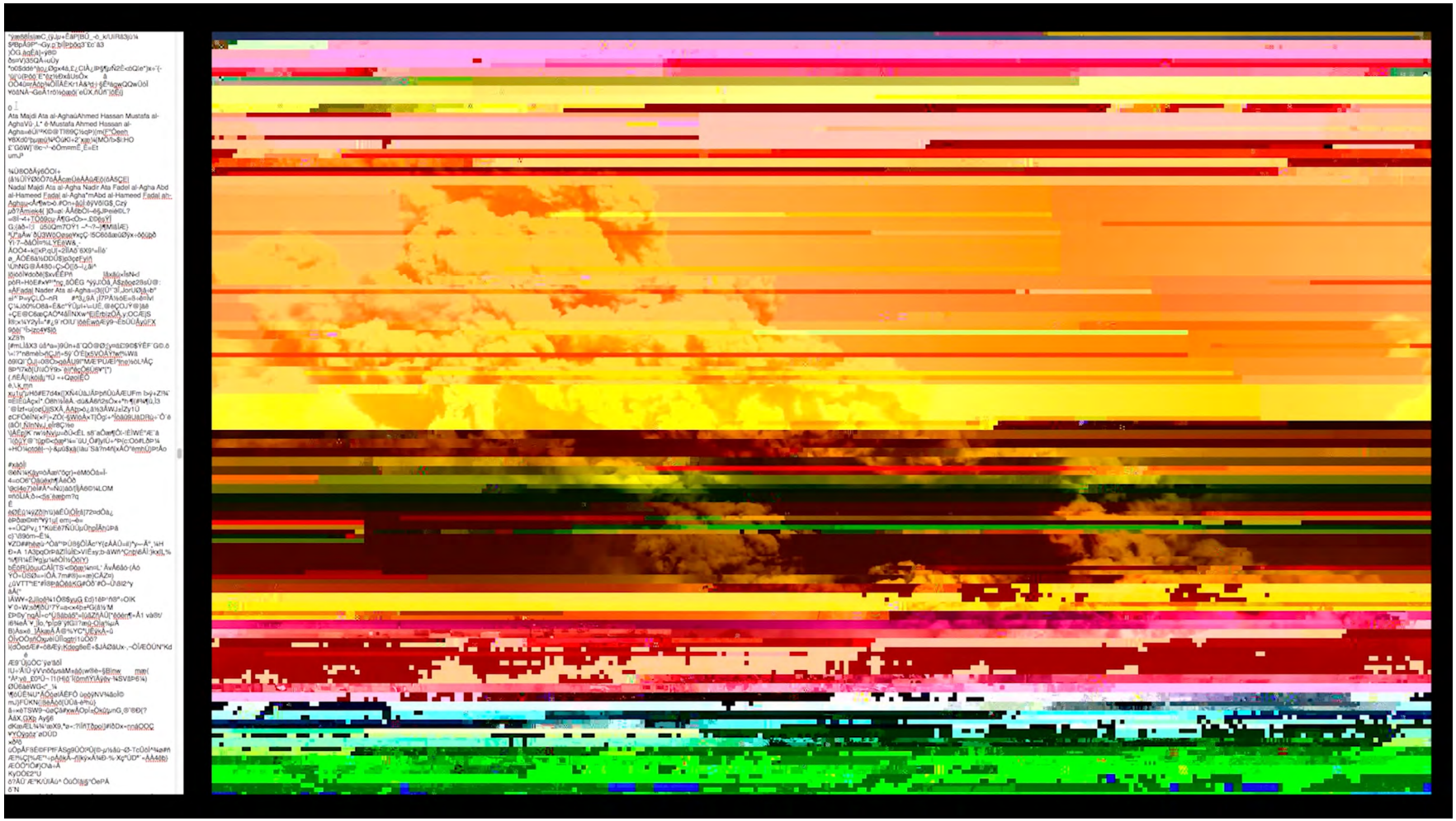

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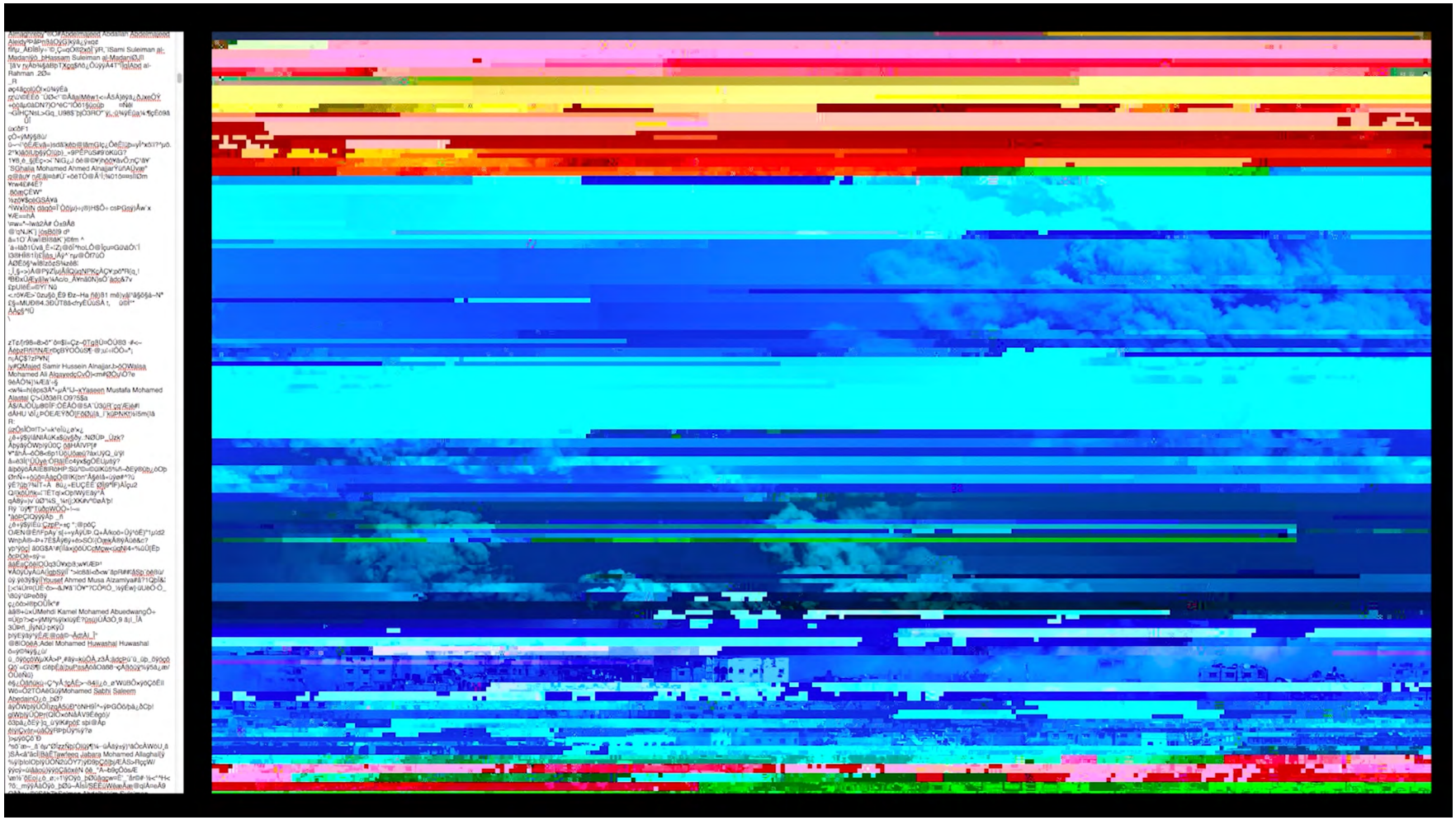

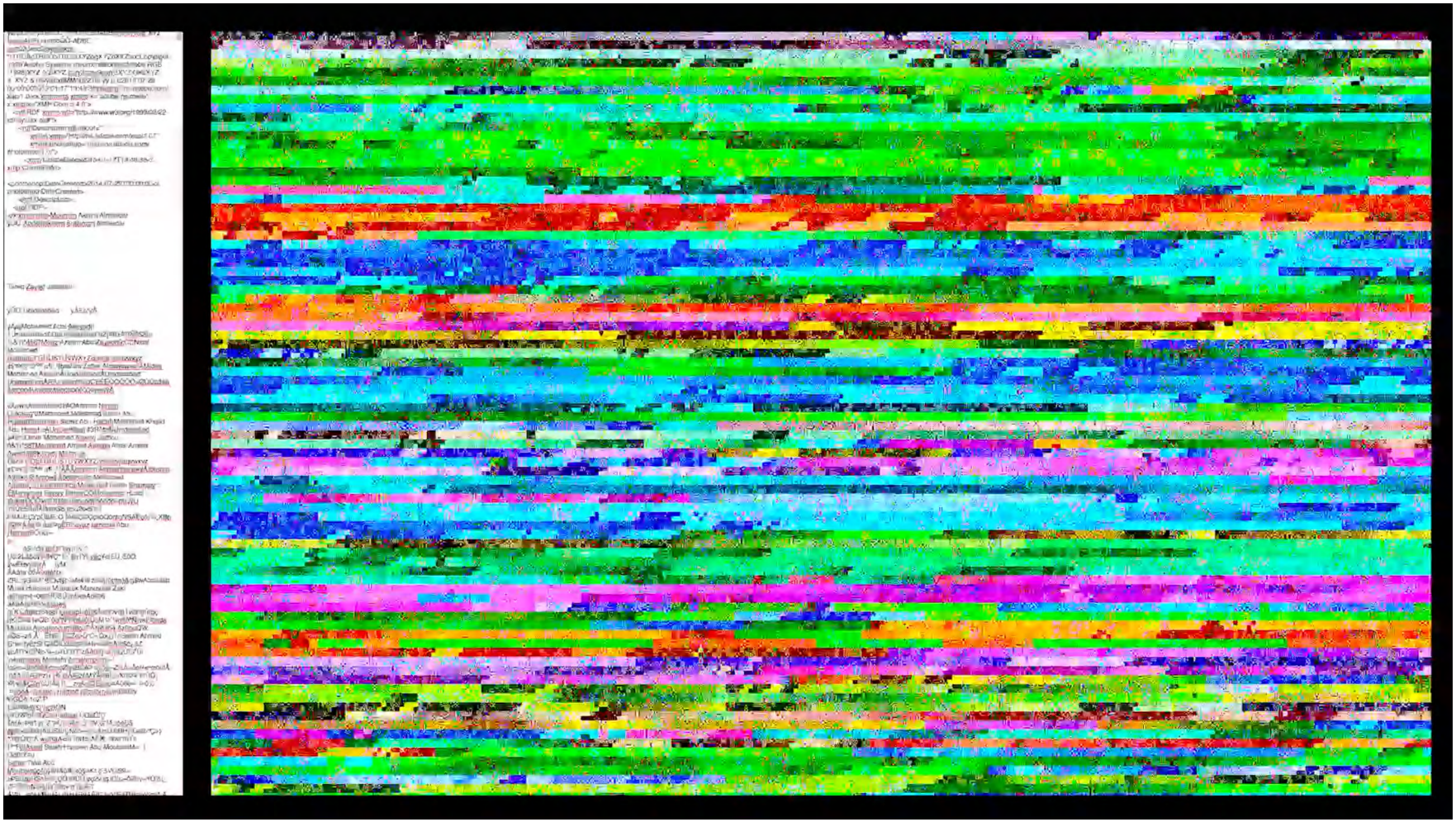

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Biography

Omar Mismar is a visual artist based in Beirut. His practice is project driven, probing the entanglement of art and politics and the aesthetics of disaster. Mismar takes up conflict and its representations via form deliberations, material interventions and translation strategies, using the performative as gesture and rehearsal. He has participated in exhibitions in San José Museum of Art, San José (2018), Tabakalera, San Sebastian (2018), the MMAG Foundation, Amman (2018), MoMA, New York (2018), Homeworks 8, Beirut (2019), Oakland Museum, California (2020) among others. Mismar is Assistant Professor of Visual Arts at the American University of Beirut.

Visual Essay

On Targets: Dropping in on American Bombing Ranges

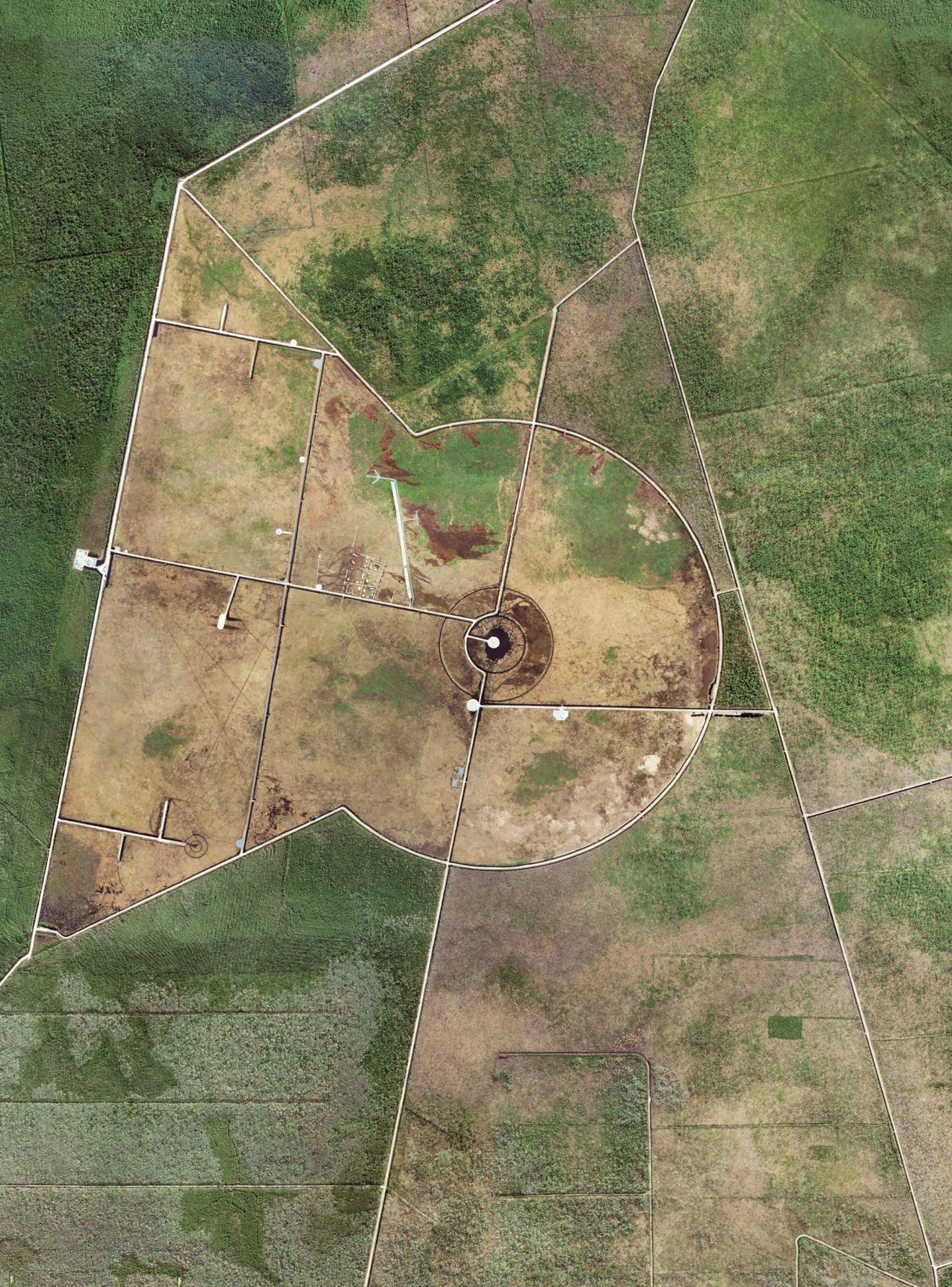
The Center for Land Use Interpretation (CLUI)

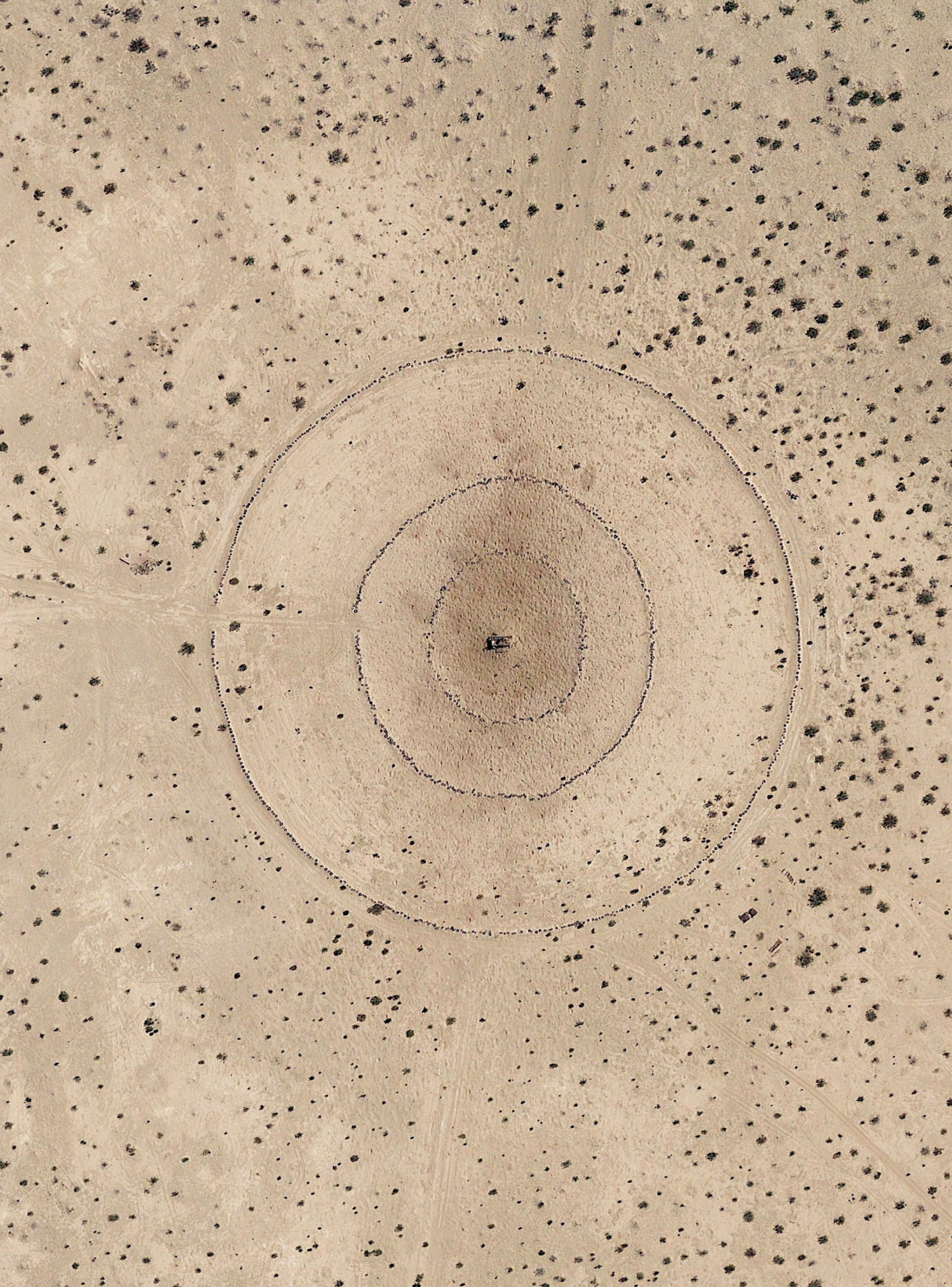
Impact range targets in military training areas can be square, triangular, rectangular, circular, and linear. Some are designed to look like other things, like airbases, villages, convoys, industrial areas, surface-to-air missile sites, and are built out of old airoplanes, trucks, tanks, cars, buses, boats, tires, mounds of earth, and empty shipping containers. Some are meant to be bombed or strafed physically, others electronically.

The most focused type of target at these ranges, the classic target you might say, is circular, like a bullseye. Its simple geometric embrace of space defines a periphery, and centre. Though largely two-dimensional when seen from above, shown as a gallery they have a cosmological air, whether a planetary hard mass pulled in by gravity, or a solar gas in a sustained continuous explosion. The tension between being drawn inwards, toward the ground, and exploding outwards, is in equilibrium.

Some people say that these days everything is a target. These, however, undoubtedly are, and they are out there for the world to see, through internet-based satellite imagery providers like Google Earth. Like framed photographs on the wall, they narrow our attention, and ask us to overlook everything else.

Fig. 1: Avon Park Air Force Range, Florida.
Fig. 2: Boardman Bombing Range, Oregon.
Fig. 3: Dare County Range, North Carolina.
Fig. 4: Dugway Proving Ground, Utah.
Fig. 5: Eglin Air Force Range, Florida.
Fig. 6: Razorback Range, Fort Chafee, Arkansas.
Fig. 7: Navy Target 68, Imperial Valley, California.
Fig. 8: Barry M. Goldwater Range, Arizona.
Fig. 9: Melrose Air Force Range, New Mexico.
Fig. 10: Oscura Range, White Sands Missile Range, New Mexico.
Fig. 11: Smoky Hill Air National Guard Range, Kansas.
Fig. 12: Superior Valley Range, China Lake Naval Weapons Center, California.
Fig. 13: Townsend Bombing Range, Georgia.
Fig. 14: Utah Test and Training Range, Utah.





Biography

The Center for Land Use Interpretation is a research and education organisation interested in understanding the nature and extent of human interaction with the surface of the earth, and in finding new meanings in the intentional and incidental forms that we individually and collectively create. We believe that the manmade landscape is a cultural inscription, that can be read to better understand who we are, and what we are doing. The organisation was founded in 1994, and since that time it has continuously produced public programs that include exhibits on land use, shown in its own network of exhibit facilities, and in public institutions all over the United States, and overseas. The Center has also published books and periodicals, conducted public tours, and hosted lectures. From the inception of the organisation, much of its activity has been focused on an online audience, where visitors to its website can freely access databases and archives.

Visual Essay

Architecture as a Visual Resource: An Aesthetic Reflection on the Aftermath of War

Katarina Andjelković

In early 1999 the conflict in Kosovo led to the apocalyptic scenario of NATO-sanctioned bombings of the former Federal Republic of Yugoslavia. One of the targets was the complex of buildings comprising the military headquarters in Belgrade: the Generalštab. Over the past twenty years no intervention has been made to repair and protect this cultural monument damaged by war, but its mental image has inevitably changed, transgressing the identity of the historical event. The trauma of war bends time and alters spatial perception into non-linear contact, producing specific modes of understanding.[1] At the same time, changing perceptions of architecture as a visual resource is affected by the aftermath of war. Could it be that a wartime elegy overshadowed the enthusiasm for remembering and reviving the past, or does it nevertheless have the capacity to give place to visual narratives concerned with explaining the past or at least save it from oblivion? It is striking that the wartime elegy rather overtakes the history of the events in exposing architecture to changing perceptions beyond the prejudices and stereotypes of war. Accordingly, my intervention is inspired by Paul Virilio's note that 'the history of battle is primarily the history of radically changing fields of perception. In other words, war consists not so much in scoring territorial, economic or other material victories as in appropriating the "immateriality" of perceptual fields'.[2]

The drawing project *The Generalštab Building as Image: A History Decomposed* deals with an aesthetic reflection on political bodies and conditions, asking how they have re-territorialised the material reality of the Generalštab building as a cultural artefact into the performativity of its political function. [Fig. 1–6] To animate the viewing encounter, I chose to transcribe the energetic event of explosion into visual forms. Material decay of the building granted access to the immateriality of perceptual fields and delineated a multi-layered untold story in a fusion of energy (the fundamental concept in physics), power (the fundamental concept in social science) and transformation.

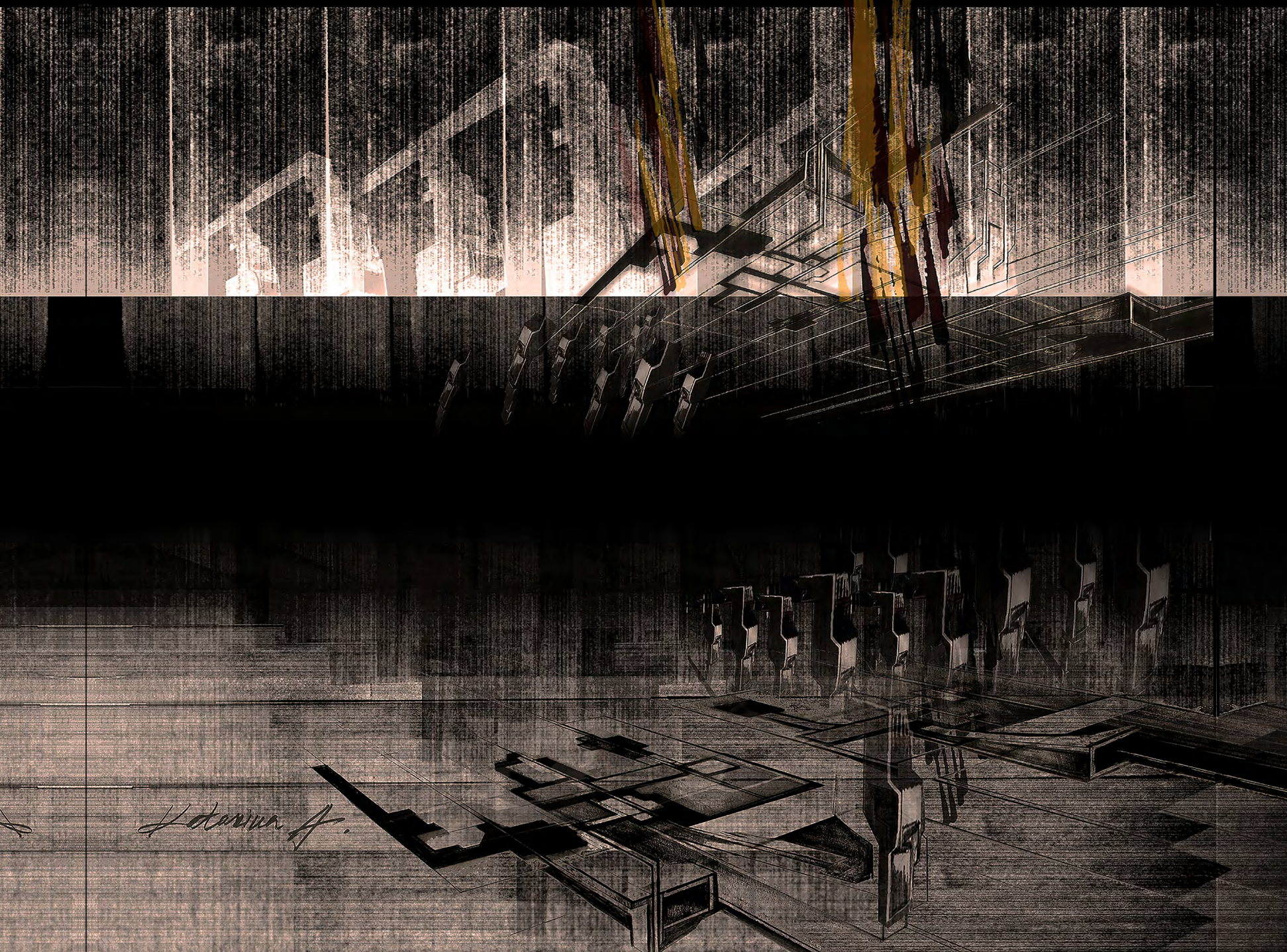
Fig. 1: *The Generalštab Building as Image: A History Decomposed*. Sequence 1. Transcription of the energetic event of explosion into visual forms. Hand- and digitally manipulated drawing. Source: author.

This encounter is seen as an opportunity to rethink political power through the analytics of physical sciences. It is revealed as a type of image which, instead of reproducing architectural reality, rather produces new perceptions of the event through the power of the energy and forces war unleashes. The resulting choreographic notations can be registered and apprehended through the universe of image representation that negotiates physical boundaries by energy and forces. This method is based on Boccioni's early twentieth-century references to the 'electric theory of matter', according to which matter is only energy.[3]

Fig. 2: Sequence 2. Transcription of the energetic event of explosion into visual forms. Generalštab building fragments in dialogues. Hand- and digitally manipulated drawing. Source: author.

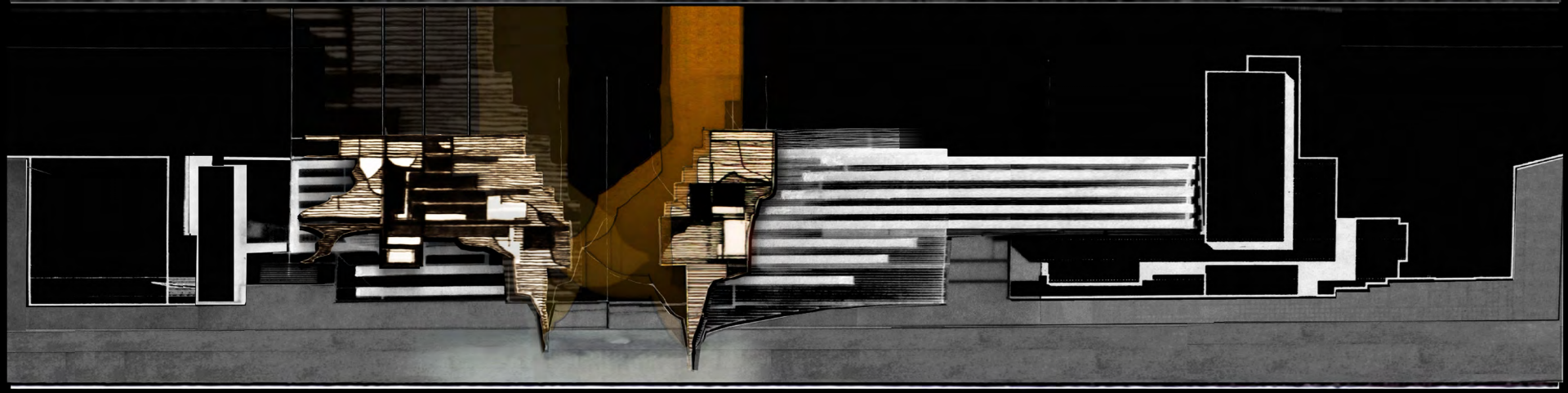
Shifting away from representational images to a more abstracted non-representational forms, the fragments of broken structure are represented in a flow, bearing a striking resemblance to electrons in their ‘bareness’ or lack of materiality. In this way, digital image manipulation allows a new perception of what exists and reveals hidden powers of material things, which are, as Hito Steyerl reminds us, ‘never just an object, but a fossil in which a constellation of forces is petrified’.[4] In other words, ‘things are never just inert objects, passive items, or lifeless shucks, but consist of tensions, forces, hidden powers, all being constantly exchanged’.[5]

Fig. 3: Sequence 3. The transformation process. Hand- and digitally manipulated drawing. Source: author.



The drawings that make up *The Generalštab Building as Image: A History Decomposed* may be seen as an opportunity to problematise the visual reinvention of space, as manipulated digital work unearths important issues and raises challenges to better understand how society's historical, political and cultural processes in each era decisively influence the type and use of visual constructs. Alongside what is considered to be the politics of destruction, this introspection claims that material incidents of time have an aesthetic value of their own, and appear to venture into a dream-like state or into the energetic event that one can almost inhabit.

Fig. 4: Sequence 4. The Generalštab building, bomb traces (a yellow strip), and the voids in the building structure. Hand- and digitally manipulated drawing. Source: author.



Introspection as a high level of uncertainty is reflected in the constant addition of a new layer over the finished drawing. This method is based on reading and using transparency, similar to what Boccioni learned while experimenting with X-ray transparency as a means of overlaying multiple viewpoints to create 'the simultaneousness of states of mind'.[6] My reference to Boccioni's practice concerns each of us, offering us a spyglass to turn to the world. Its lens casts doubt on truth that is hidden in the fabrication of fictional scenarios of the existing fragments of building as energetic particles, that may indeed be a matter of necessity.

Fig. 5: Sequence 5. The Generalštab building, bomb traces (a yellow strip), and the voids in the building structure. Hand- and digitally manipulated drawing. Source: author.

This system of representation changes perceptions where the veracity of the represented event falls systematically under suspicion. It balances between the visible remnant (rejected reality) and invisible harmony (fictional scenario). Consequently, the leftovers from playing with the arbitrary disintegration of materiality produce images that are fundamentally unstable, creating at the same time the stability of the destruction itself.

Fig. 6: Sequence 6. The transformation process. Hand- and digitally manipulated drawing. Source: author.

Notes

1. Caren Kaplan, 'Bringing the War Home: Visual Aftermaths and Domestic Disturbances in the Era of Modern Warfare', 21 February 2019, podcast by MIT Comparative Media Studies/Writing, 1:35:17, https://cmsw.mit.edu.
2. Paul Virilio, *War and Cinema: The Logistics of Perception,* trans. Patrick Camiller (London: Verso, 1989), 8.
3. Boccioni's reference to the electric theory appears in his *Pittura scultura futuriste: dinamismo plastico* (Milan: Edizioni futuriste di Poesia, 1914). Read more in: Linda Dalrymple Henderson, 'Illuminating Energy and Art in the Early Twentieth Century and Beyond: from Marcel Duchamp to Keith Sonnier', in *Energies in the Arts,* ed. Douglas Kahn (Cambridge, MA: The MIT Press, 2019), 134.
4. Hito Steyerl, *The Wretched of the Screen* (Berlin: Sternberg Press, 2012), 55.
5. Ibid, 55.
6. Umberto Boccioni et al., 'The Exhibitors to the Public 1912', in *Futurist Manifestos*, ed. Umbro Apollonio (Boston: MFA Publications, 2001), 47.

Biography

Katarina Andjelković (PhD, MArch Eng), is a theorist, practicing architect, researcher and a painter. She served as a visiting professor, Chair of Creative Architecture at the University of Oklahoma, a lecturer and a researcher at the Institute of Form Theory and History in Oslo, the Institute of Urbanism and Landscape in Oslo, and the University of Belgrade, and guest-lectured at TU Delft, AHO Oslo and ITU (Istanbul Technical University). She has lectured at conferences in more than twenty-three countries in Europe, the UK, the US and Canada. Andjelković has published her research widely in international journals (Web of Science) and won numerous awards for her architecture design and urban design competitions, and she has exhibited her work in London, Dublin, Lisbon, Delft and Belgrade. She is the author of *Preliminary Architectural Design*, a national project supported by the government of Serbia. She won the Belgrade Chamber of Commerce Award for Best Master Thesis defended at Universities in Serbia in all disciplines.

Footprint is a peer-reviewed journal presenting academic research in the field of architecture theory. The journal encourages the study of architecture and the urban environment as a means of comprehending culture and society, and as a tool for relating them to shifting ideological doctrines and philosophical ideas. The journal promotes the creation and development – or revision – of conceptual frameworks and methods of inquiry. The journal is engaged in creating a body of critical and reflexive texts with a breadth and depth of thought which would enrich the architecture discipline and produce new knowledge, conceptual methodologies and original understandings.

Footprint is grateful to our peer reviewers, who generously offered their time and expertise. In this issue, the following papers were peer-reviewed: 'Site-Archive-Medium: VR, Architectural History, Pedagogy and the Case of Lifta'; 'Media Ecologies of the 'Extractive View': Image Operations of Material Exchange'; 'The Spatial Extensions of the Right to Seek Asylum: The Eastern Mediterranean Refugee Route; One Map, Multiple Legends: Exposing Military Spatial Narratives in the Israeli Desert'; 'In the Midst of the Revolution: The *Rond-Point* as Media of Contention'; 'Relaying Memory through a Generated Environment: A Critical Recreation of Prisoners' Sense-Perceptions in Khiam Detention Centre'.

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