long burst of gunfire. Thirteen seconds after the first shot Abu al-Qi‘an’s vehicle was brought to a standstill. During the last seven seconds of his drive, Abu al-Qi‘an’s vehicle horn is continuously sounding, suggesting he might be lying against the steering wheel, unconscious. After the car was brought to a standstill five or six policemen are seen surrounding it. Thirty-five seconds later we identified the sound of a single gunshot. This last shot could have occurred somewhere else but it is consistent with what Israeli security agencies call “verification shot” — the shooting of already incapacitated assailants. At this early stage of this investigation, it was too early to know.

We suggested further investigation was necessary and demanded that the report on the postmortem autopsy be made public.

We released our analysis on January 19, a day after the incident. The police responded by saying that the first three shots were fired in the air. They also tweeted about our analysis:

Tendentious editing will not rewrite reality. The documentation of the incident proved intention to murder policemen. This has one name: terror. No clips that distort data can change that.

Later the police admitted that the first three shots might not have been fired in the air but at “the wheels” of the car. Leaked results of the autopsy undertaken the following day revealed that Abu al-Qi‘an was shot in the right knee. This might support a scenario in which Abu al-Qi‘an lost control of his vehicle. The autopsy also showed Abu al-Qi‘an died after bleeding for twenty minutes without medical care, despite the three ambulances present in the area.142 In late February, based on our and others’ analyses, the police finally retracted their version that it was a terrorist attack at all. We are now seeking a moratorium on all demolitions in the Negev.

I added a description of this ongoing investigation at the end of the book, well after it was already sealed (thanks to the committed Zone team), in order to demonstrate an important point about counterforensics: the slow violence of environmental transformation is convertible to, and can always flare up in, kinetic violence.

In justifying the shooting of Abu al-Qi‘an, the police will no doubt revert to their duration of convenience — “the split second” — the time in which a policeman must decide how to act in view of the perceived threat of a car approaching. The unspecified duration of the “split second” is also the common temporality of forensics. The question must, however, always be: what ideology, politics, and “common sense” is already programmed or naturalized into the “split second.” In this case, it seems to be preconditioned by a conception of the Bedouins as squatters, as threats and enemies to the state. Refracted within the “split second” of the decision to shoot at a slow moving vehicle is therefore the long duration, now generations long, of the violence of colonization and environmental transformation.

Acknowledgments

My book acknowledgments are becoming longer, perhaps because the infrastructure involved in their production has become increasingly complex. This book relied upon a particularly long process and the participation of many people. Despite my immense gratitude to those whose collaboration taught me so much, I will attempt to keep it as short as possible (but not shorter).

Forensic Architecture was set up in 2010. In 2011, it gained support from a four-year European Research Council (ERC) grant. Susan Schuppli and Paulo Tavares helped write the application for it. Susan became the first project coordinator and senior research fellow on it. In the latter role, she undertook research on media forensics. The other research fellows were Anselm Franke, who cocurated with me the exhibition Forensis, Thomas Keenan, with whom I coauthored the book Mengel’s Skull: The Advent of Forensic Aesthetics (Berlin: Sternberg Press, 2012), Adrian Lahoud, Alessandro Petti, Ann-Sofi Rönnskog, and John Palmesino (Territorial Agency), and Srdjan Jovanovic Weiss. Francesco Sebregondi, a young graduate from our MA in Research Architecture Program, was hired as an administrator, but soon became an integral part of the research team and the project coordinator after Susan. In 2014, he helped secure another ERC grant to develop PATTERN, crowd-sourcing, data-aggregation, and visualisation software for conflict mapping, and was in charge of the project until its successful release as open-source software. Christina Varvia, who oversaw the video analysis in our Black Friday investigation of the Gaza war of 2014, became the project coordinator after Francesco. Further financial support for Forensic Architecture came from additional ERC grants (a Proof of Concept Grant in 2014–2015 and a Consolidator Grant in 2016–2021), the Potter Foundation, the Sigrid Rausing Trust, and the Oak Foundation.

Some readers will recognize elements of this book from previous publications or exhibitions. The extensive reframing of these was essential in order to outline the methodological and political proposition that forensic
architecture has become. Forensic Architecture still operates as an agency, and we are busy with a great number of new challenges that will be published in the future.

Many of our other researchers were graduates and students at the Centre for Research Architecture, University of London. Lawrence Abu Hamdan developed the new investigative field of audio forensics, Nabiil Ahmed undertook investigations in Bangladesh and West Papua, Maayan Amir developed image analysis under the term of "extraterritorial images," and Ayeshaa Hameed worked on the history (and future) of fingerprints. Charles Heller and Lorenzo Pezzani inaugurated the critical field of research and activism that is forensic oceanography. Paulo Tavares developed the notion of environmental violence in relation to his work in Amazonia, Hannah Meszaros Martin in relation to her work on Colombia, and Godofredo Pereira in relation to the mining frontier in northern Chile. Nick Axel coordinated a few projects on video and data analysis. Helene Kazan's research on risk and the destruction of homes in Lebanon drew from and further contributed to this project. The work of Gerald Nestler, Fusun Türeci, and Emanuel Leiba intersected with the notion of forensics in different ways. Jacob Burns was an extremely committed researcher and assistant and partook in most investigations. Ariel Caine developed our ability to interrogate space through images, especially with the use of photogrammetry. Samaneh Moafi coordinated the environmental violence department and Stefan Laxness coordinated our Mexico investigation. Nico Czyz, Hana Rizvanoli, Dorette Panagiotopoulou, Gustav A. Tøftgaard, Vere Van Gool, Sophie Dyer, Daniel Fernández Pascual, Andrea Bognaro, Blake Fisher, Hania Halabi, Samir Harb, Zahra Hussain, Steffen Kramer, Stefanos Lavdas, Jason Men, Aisen Schwabe, Camila E. Sotomayor, Solveig Suess, and others researched different elements of the project.

Sheila Shiekhe was the managing editor for Forensic: The Architecture of Public Truth (Berlin: Sternberg Press, 2014), where she was also a member of the editorial board, and for The Conflict Shoreline: Colonisation as Climate Change in the Negev Desert (Göttingen: Steidl and Cabinet, 2013). The latter was a book written around the aerial photographs of Fazal Sheikh and started the research that lead to Part 3 in this book. Rosario Giurlades cocrated (with Anselm Franke and me) the FRoa/Buenos Aires, MACBA/Barcelona, and MUAC/Mexico City versions of our exhibition at the invitations of Adriana Rosenberg, Ferran Baronzó, and Cuauhtémoc Medina, respectively. Alejandro Aravena invited us to exhibit in the 2016 Venice Biennale of Architecture. Eitan Diamond and Shourideh C. Molavi, both international lawyers, were our legal researchers. David Kuper, legal advisor for Goldsmiths, has given us close legal advice and supervision throughout. Ana Naomi de Souza has prepared a documentary film, The Architecture of Violence, for Al Jazeera that included a section on Forensic Architecture and later worked on several investigations, especially on our collaboration with Amnesty International on the Saydnaya prison in Syria. Janon Van Den Hoek offered continuous assistance with remote sensing. Chris Woods is still a close collaborator, initially through the Bureau of Investigative Journalism (BIJ) and later at the Airways project. Together with the Centre for Investigative Journalism (CIJ), of which I am now one of the directors, we have inaugurated the Gavin MacFadyen investigation in memory of our beloved founding director and friend, who has recently passed away. Chris Cobb Smith offered expert analysis on weapons and munitions. Mohammed Abdullah, Mahmoud Abu Rahma, and Angela Gaff from al-Mezan closely collaborated on investigations in Gaza.

Organizations that were part of the first ERC-funded research project included DAAR (an architectural studio and residency I established together with Sandi Hilal and Alessandro Petti in Beit Sahour/Palestine), the Human Rights Project at Bard College, Grupa Spomienek from Belgrade, Situ Research from New York City, and Caroline Sturdy Colls from the Centre of Archaeology at Staffordshire University.

Groups for whom we undertook research included the Michael Sfard Law Office in Tel Aviv, B’tselem, Amnesty International, Airwars, Médecins Sans Frontières (MSF), the International Commission of the Red Cross (ICRC), the Argentinean Forensic Anthropology Team (EAAF), Centro Prodh in Mexico City, Centro Para la Acción Legal en Derechos Humanos, ODHAG, the Oficina de Derechos Humanos del Arzobispado de Guatemala, Working Group Four Faces of Omanak, Human Rights Watch, Migran europ, the Fédération Internationale des Ligue des Droits de l’Homme, the UN Office of the Special Rapporteur on Counter-Terrorism (UNSCRGT), the Bureau of Investigative Journalism (BJJ), the Al Mezan Center for Human Rights/Gaza, the Palestinian Commission on Human Rights (PCHR), Yesh Din, Zochrot, the Public Laboratory for Open Technology and Science, the Foundation for Fundamental Rights Islamabad, Pakistan, the European Center for Constitutional and Human Rights in Berlin (ECHR), Al Jazeera English, Reprieve, One World Research, and Witness.

I would like to thank Irit Rogoff, Joreila Ardini, Eaviv Butt, and Astrid Schnetterling, who at different times were helpful heads of the Department of Visual Cultures at Goldsmiths, University of London, where the Forensic
Architecture project was housed, and the departmental manager, Tom Chivers, as well as other Goldsmiths colleagues such as Matt Fuller, Patrick Loughrey, our warden, and his deputies at the time, Roger Burrows and Jane Powell, who supported it. Thanks also go to Graham D. Burnett, Eduardo Cadava, Beatriz Colomina, Hal Foster, and Alejandro Zan-ola Polo for sponsoring my Global Scholar position to introduce forensic architecture at Princeton University.

I also would like to express my gratitude to the team at Zone Books: Michel Feher and Ramona Naddaff for commissioning, editing, and publishing this book; Bud Dynack for making sense of this text; Meghan Gale for making this complex book possible; Andrew Kiddie, Michael Newton, and Chloe Truong-Jones for the proofreading; and Julie Fry for giving it such a rich form. Finally, again, many thanks to my friends Sandi Hilal, Nikolaus Hirsch, Nina Katchadourian, Thomas Keenan, Laura Kurgan, Shourideh Molavi, Sina Najafi, Alessandro Petti, Bernd Scherer, and Susan Schuppli, as well as, as always, of course, my dear Ines.

Notes

PREFACE

1 Carlo Ginzburg in Microhistories, eds. Magnus Börks and Andrej Slavik (Stockholm: Konstfack, 2001), p. 37. In this quote, Ginzburg refers to history, but we find that it is relevant to architecture, too.

INTRODUCTION: VIOLENCE AT THE THRESHOLD OF DETECTABILITY

An earlier version of this essay was published as an introduction to Forensi: The Architecture of Public Truth, ed. Forensi: Architecture Berlin: Sternberg Press, 2001, and was the basis for a film that Harun Farocki planned to make using other elements from Forensi shortly before his death. This essay is thus dedicated to his memory.


2 A precedent from the early 1900s in which architectural drawings were presented as evidence was the trial in Vienna of two of the architects who designed Auschwitz, Walter Dejacq and Fritz Ertl. Both architects were acquitted. Ifat Wenzman, "The Architecture of Negation: An Interview with Robert Jan van Pelt," in Forensi, p. 149.

3 Errol Morris, Mr. Death: The Rise and Fall of Fred A. Leuchter Jr., 1999.

4 An extended version of van Pelt’s expert report was republished as Robert Jan van Pelt, The Case for Auschwitz: Evidence from the Irving Trial (Bloomington: Indiana University Press, 2002).


6 Van Pelt, The Case for Auschwitz, pp. 2–3; Daniel Keren, Jamie McCarthy, and Harry W. Mazel, "The Ruins of the Gas Chambers: A Forensic Investigation of Crematoriums at Auschwitz I and Auschwitz-Birkenau," Holocaust and Genocide Studies 18, 2 (Spring 2004), http://www.holocaust-history.org/auschwitz/traces/reports/holes.html. The team was able to show a construction detail necessary for the creation of a hole in a slab, rehear that was deliberately cut, with the ends turned upward.


8 Ibid., Day 10, p. 150.

9 Ibid., Day 10, p. 145.


11 The argument went on to present the Holocaust as the ethical basis for American domination, perceived, in its own eyes, as the bulwark against an "evil" modeled on the Nazis. Instead of confronting the way in which the use of the Holocaust shaped the politics of the present as that
of the "Jessor exit," these groups sought to renew history. Van Pelt, The Case for Auschwitz, pp. 3-14, 458. One of the proponents of this approach was a Paris-based bookshop and publishing house called La Vieille Taupe, which became renowned in the 1980s for publishing anti-Semitic and Holocaust denial literature.

22. Faurisson read the testimonies of survivors and felt alike for their contradictions. The testimonies of survivors were records of traumatic experiences and contained many lacunas. This be used as an excuse to declare all testimonies biased and flawed. The next step was to shift his focus to maternal evidence, including the deities of the crematoriums. In 1978, Faurisson traveled to Auschwitz to photograph the site of the crematoriums. Richard Fauschon, "A Challenge to David Irving," Institute for Historical Review 5.2-4 (Winter 1984), http://www.ihr.org/journals/ir/11/v11n2.pdf. Fauschon claimed that the only concrete roof that lacked the holes. Irving claimed that none of the surviving representations of the roof—drawings or photographs—showed them. He challenged Irving by then only a war sympathizer, not a Holocaust denier, to join his campaign of denial.


24. This occurred on April 25, 1983. Storrs's largest competitor, the Bild Zeitung, smuggled Irving into Storrs's press conference to announce the discovery. Irving later changed his mind and claimed that the roof was not authentic. He might have been the first to call them fake, but also the last to call them authentic. Van Pelt, The Case for Auschwitz, pp. 21-22.

25. A hole is more, information than the matter that surrounds it, that be reinforced concrete or an air-rich inside room. In the case of Auschwitz, there was no doubt, even relative or partial, no possible negation without affirmation of materiality. Henri Bergson, Creative Evolution, trans. Arthur Mitchell (New York: Henry Holt 1911), p. 264. Thanks to Susan Schapell for this point.

26. Van Pelt explained that none of the drawings of the gas chamber showed the holes because the architects were not allowed to draw in these pieces of incriminating evidence. Van Pelt, The Case for Auschwitz, p. 410.


28. The perforation of the images of the vents is a result of the printing. The image has been filmed from a print. For the photographic interference pattern, see the next image.

29. Irving was referring to a 1952 study by John C. Ball. See van Pelt, The Case for Auschwitz, p. 56.


31. Bad Day in 44. This was paraphrased by van Pelt in The Case for Auschwitz, pp. 84 and 353.

32. This is similar to what Alfred North Whitehead called "nonsense perceptions," with which matter has a direct, nonsense sense of duration in form. Alfred North Whitehead, Adventures of Ideas (New York: Macmillan, 1933), pp. 23-34.

33. One of the last of the Srebrenica cases at the International Criminal Tribunal for the Former Yugoslavia (the Zdravko Tolimir case, decided in 2012) produced the following exchange in regard to an aerial image of the Nova Kasarna soccer field. "The Trial Chamber accepted the explanation of the witness on identifying darker pixels as people rather than shadows as claimed by the accused." "Any witness has spent numerous and numerous hours analysing all these pictures and identifying what reference they can have on the ground; it's a football field. There are no bushes in the middle. So these grey zones are not shadows. Though, indeed, a shadow has the same point than (sic) a group of people on the picture, but if you compare what is officially said on the photograph and the corroborations (1991) you can make of what a man represents in terms of a pixel on such a photo, this is why I allow myself to say that the dots that I have marked previously are really marks." International Criminal Tribunal for the Former Yugoslavia, trial transcript, March 29, 2000, pp. 919-24, http://www.icty.org/s/en/cases/tolimir/trans-01/en/00133280.htm. Thanks to Patrick Kroker for this point.

34. His evidence also included the interpretation of architectural plans drawn from the archive of Auschwitz Central Construction Office. In addition to The Case for Auschwitz, see also Deborah Dwork and Robert Jan van Pelt, Auschwitz 1927 to the Present: A History (New York: W. W. Norton, 2002). Robert Jan van Pelt and Carroll William Westfall, Architectural Principles in the Age of History (New Haven: Yale University Press, 1995), and many other articles and essays by van Pelt.

35. The project was coordinated by Susan Schapell.

36. For Forensic Architecture: Edward Weisman, Susan Schapell, Jacob Burns, Steffen Krammer, Perrier Brelet, Samir Hait, Zahra Hussain, Francesco Sebregondi, and Blake Fisher. Some cases were undertaken in collaboration with Situ Research. Other partner organizations included the European Center for Constitutional and Human Rights (Andreas Scheller), One World Research (B dread Prince, Nasser Arabrayeh, Amin Manzoori, Al Jazzera English (Ana Nasimi de Sousa), Chris Woods (freelance journalist), Edmund Clark (photographer), Chris Cob Naimsh (consultant and expert consultant), and Myra MacDonald (freelance journalist).


42. Laura Kurgan, Close Up at a Distance: Mapping, Technology and Politics (New York: Zone Books, 2013). Kurgan's book on satellite imagery is an excellent source for understanding the history of resolution.


In 1878, Lombroso published L’uomo delinquente (Criminal man), in which he measured the faces of fifty lawbreakers to create an exhaustive record of criminal types. Beginning in 1890, Bens published a series of volumes under the general title Manual de polyclinique scientifique and Alphonse Bal- tizios, while working for the Paris police force in 1879, also developed an anthropometric system with particular focus on the measurements of the face and head.


The operative concept in regulating this temporal inversion, “imminence,” means “instant, over-whelming, leaving no choice and no moment for deliberation.” However, the temporality of imminence has been made elastic, gradually pushed back by a series of qualifying formulations such as “the risk of imminent harm,” “imminent threat of violent attack,” and “continuing and imminent threat.” Imminence, as James Jaffer from the ACLU puts it, “is no longer a concept that implies the coming of a specific event — instead, it is now more equivalent to mere ‘asymptotic and indefinite.’” James Jaffer, “The Justice Department’s White Paper on Targeted Killing,” ACLU Blog of Rights, February 15, 2013, https://www.aclu.org/blog/national-security-justice-departments-white-paper-targeted-killing. In Israel, threats are often presented as ‘ticking bombs’ but as Israeli human rights lawyers have sarcastically commented regarding an analogous context, such ‘bombs’ can go on ticking for a long time. John Brennan has put it in this way: ‘We’re not carrying out these actions to retaliate for past transgressions. We are not a court, we’re not trying to determine guilt or innocence, and then carry out a strike in retaliation.’ John Brennan, The Efficacy and Ethics of U.S. Counterterrorism Strategy, The Wilson Center, International Security Studies, April 30, 2012, http://www.wilsoncenter.org/event/the-efficacy-and-ethics-of-u-s-counterterrorism-strategy.


Forensic Architecture and the Bureau of Investigative Journalism, in collaboration with Situ Research, “Drone Strikes in Pakistan.”


Ross and Seidle, “Most US Drone Strikes in Pakistani Attack Houses.” The analysis also revealed that the time of the attack affected the number of civilian casualties. Romes are twice as likely to be attacked at night, when civilians tend to be present. These strikes are particularly deadly to women and children. Likewise, the analysis demonstrated that roughly half of all drone strikes hit targets in the T稍微 Valley, the most densely populated area of North Waziristan, connecting three major towns — Battal Kheil, Minewah, and Mir Ali— with a continuous fabric of agricultural villagers, nothing like the “remote tribal region” to which US spokespersons refer in the media.

Michel Foucault, Forensic Speech, trans. Jennifer裨值 (New York: Semiotext(e), 2001). pp. 15-16. Punishment, Foucault explains, is a form of criticism articulated “in a situation where the speaker or confessor is in a position of inferiority with respect to the interlocutor. The punishment is always less powerful than the one with whom he or she speaks. The punishment comes from ‘below,’ so we were, and is directed toward ‘above.’” Ibid., p. 9. See also Michel Foucault, The Courage of Truth, trans. Graham Burchell (New York: Palgrave Macmillan, 2011).


books and articles about the Holocaust, the dark frame is cropped off. In his seminal reading of these images, Georges Dié-Huberman objects to this cropping because for him, the frame is a crucial part of the image: not only is it the only documentation of the interior of a gas chamber, but it testifies to the mortal danger in taking this image. Georges Dié-Huberman, Images in Spite of All: Four Photographs from Auschwitz (Chicago: University of Chicago Press, 2012).


Hanan Farkas presented a similar experiment in embodied mediation in Immerision, a video work that dealt with a therapy session for soldiers suffering from posttraumatic stress disorder. An instructor, demonstrating this technique, wears a headset and replays a combat experience in a simulated environment that appears like a video game. The soldier moves through a virtual reconstruction of the scene in which he got wounded. Hanan Farkas, Enrare Spier/Serious Games III: Immerision, video installation, 2009. Working with the witness from the Mir Ali strike, our technique was related, but also different. The witness was building a model of the environment because, unlike the US military, we did not have an existing information about this environment, certainly not about the intimate spaces of the interior of victims' houses. Unlike the battle experience of a soldier, who can move around the battlefield and see space from different perspectives, our witness was spatially constrained, confined to a small space that was separated from the main part of the house, which was reserved for the men.

Frances Yates, The Art of Memory (London: Phoenix, 1956). The invention of the art of memory was attributed by Cicero and others to the Greek poet Simonides, he had just walked out of a banquet hall full of people when the roof collapsed, killing everyone inside. The bodies could not be identified, but Simonides was able to reconstruct the flow of conversation between the guests around the table and thus remember where each guest had been sitting and identify the bodies, which could then be returned to their families for burial.

However, Yates does not discuss the ghosting capacity of memory. According to the French poet Jacques Roubaud, even once removed, these memory objects tend to leave reminders in the rooms in which they were placed. The trace of their presence cannot be fully erased, however many times they are removed, and they repeatedly appear in the wrong speech, haunting the building in question. When this happens, the building has to be abandoned and burned to the ground and a new one mentally built in its stead. Roubaud's insight highlights the importance of forgetting, a task considerably more difficult than that of remembering, but nevertheless one on which memory depends. Jacques Roubaud, "Monocrom Hand," presentation at Memory Marathon, The Serpentine Gallery, October 12-14, 2013, http://vimeo.com/16612290.

PART ONE: WHAT IS FORENSIC ARCHITECTURE?


3 "A forensic architect is essentially a professional architect who applies the art and science of the profession to various aspects of architecture, construction, and legal issues. Activities associated with architectural forensics include the investigation, determination and causes for deterioration, deficiencies, and failures, in addition to the preparation of reports, and testimony under oath, or offer advisory opinions that assist in resolution of related disputes. The forensic architect may also be asked to render a professional opinion in regards to responsibility for failure or deficiency. In the author's opinion, the forensic architect's job description should also include: failure and deficiency prevention and cure." Sam Kubba. Architectural Forensics (New York: McGraw-Hill Professional, 2008), p. 1.

4 "Architects who have given their practice over full time to forensic investigations and report writing are few and far between. If I had to hazard a guess, I would say less than 5 thousand across America. I believe that firms who employ architects for forensic investigation have been around for about 10 to 15 years." Pargelow, Forensic Architecture: An Introduction, unpaginated.


8 Leonardo da Vinci thought that cracks are endemic to all structures. "Parallel cracks are constantly appearing in buildings erected in mountainous places where the rocks are stratified and the stratification runs obliquely, for, in these oblique seams, water and other moisture often penetrate, bearing with it a quantity of grease and slimy earth; and since this stratification does not continue down to the bottom of the valley the rocks go slipping down their slope, and never end their movement until they have descended to the bottom of the valley, carrying with them after the manner of a boat such part of the building as they have severed from the rest." Leonardo da Vinci, "Of Cracks in Walls Wide at the Base and Narrow at the Top and Those Causing," The Notebooks of Leonardo da Vinci, vol. 3, chap. 38, in Architecture, ed. and trans. Edward Macready (New York: George Blierier, 1856), 50. http://archive.org/stream/notebooksoleda257marltxts/0050.zip; Peter Galison, in Carolyn Y. Johnson, "What the Rohenschach Tells Us: To Harvard Peter Galison, the Inklit Test Looks a Lot Like a Farming Point for Society," Boston Globe, June 16, 2002. https://www.bostonglobe.com/deals/2002/06/16/what-rohenschach-test-really-shows/SFKY7QX0W5FDWQVd4/story.html.

9 John Raskin, the Victorian art and architecture historian, recommended examining buildings from a distance of one foot away. In the preface to The Shores of Venice, he wrote: "Every day in question was determinable only by external evidence, and it became necessary for me to examine not only every one of the older palaces, score by score, but every fragment throughout the city which afforded any clue to the formation of its styles." Consequently, "my account of every building is based on personal examination and measurement of it, and "how much greater becomes the likelihood of error in the description of things which must be in many parts observed from a distance." John Raskin. "Preface to the First Edition" (1844). In: The Works of John Raskin, vol. 9, The Shores of Venice, eds. Edward Tyd Cook and Alexander D. O. Wodworth (New York: Longmans, Green, 1901–1913), pp. 4–5.
expertise of the report authors.” The full judgment is available, in Hebrew, at http://hizyon.co.il/file/ru/645f690c482e48ab8e83464e.htm.


41 There are of course several precedents to the work of the EAAF. During World War II, it was the Nazis who organized one of the first mass executions, when the remains of Polish officers murdered by the Soviets in Katyn were displayed for propaganda purposes. Karel Berkhoff, “Bykivnia: New Grave Robbers, Activists, and Foreigners Ended Official Silence about Stalin’s Mass Graves near Kieps,” in Human Remains and Identification: Mass Violence, Genocide and the Forensic Turn, eds. Elisabeth Anstett and Jean-Marc Dreyfus (Manchester: Manchester University Press, 2005), pp. 72-73.


43 Rosenblatt, Diving for the Disappeared, p. 4.


52 If popular entertainment is any indicator of the cultural shift toward forensic fetishism, then it is significant that from the television CSI series to the novels of Patricia Cornwell and the former forensic experts Kerry McCarthy and Kathy Reichs, the scientific-detective has gradually taken the place of the psychologist/psychosocial-detective popular in TV dramas throughout the 1980s and 1990s, which often reflected the emphasis on psychology by such novelists as Agatha Christie.

53 Huldig, working in Rwanda, was quoted saying: “The dead are speaking to us. We are interpreting for the dead. The dead are telling us the same story that the living told the investigators. But this is the first time on this scale that they have been allowed to speak.” James C. McKinley, Jr., “From a Grave in Rwanda, Hundreds of Dead Tell Thrice Tale,” New York Times, February 16, 1995, quoted in Keenan, “Getting the Dead to Tell Me What Happened,” pp. 35-40. For Snow’s quote, see Weisman, “Osteobiography: An Interview with Clyde Snow.”

54 Keenan and Weisman, Mengele’s Skull, pp. 89-91.

55 Sheila Shiel, “Forensic Theatre: Grupo Sperminski’s Pythagorean Lecture. Machreves of Re-association,” in Forensic, pp. 146-88. When more than 70 percent of the bone mass of a single person was collected, the bones were formally considered a single individual worthy of referral, according to Islamic beliefs. Some of the victims who were shot and put into mass graves considered themselves to be secular Yugoslavs, but were inhumed with a religion identity. This reflected the process of Yugoslavia’s ethnic division.


60. See, for example, Alan Redding, Ethics: An Essay on the Understanding of Evil, tr. Peter Hallward (London: Verso, 2001).


64. Whitehead, Process and Reality, pp. 3–4, 249. “Non-sensation perception” for Whitehead is limited to living entities; but it is suggestive of its possibility as an extension beyond sensation, for him, it is limited to the human or even to the living, but is a property of all material forms. See also Melanie Segal, “A Situated Metaphysics: Things, History, and Pragmatic Speculation in A. N. Whitehead,” in The Ailure of Things, eds. Roland Faber and Andrew Goftoff (London: Bloomsbury, 2010). See also John Durham Peters, The Marvelous Clouds: Toward a Philosophy of Elemental Media (Chicago: University of Chicago Press, 2005), p. 4.

65. In the opening pages of Matter and Memory, Henri Bergson writes: “Matter is an aggregate of ‘images.’ And by ‘image’ we mean a certain existence which is more than that which the idealist calls a representation, but less than that which the realist calls a thing — an existence placed halfway between the ‘thing’ and the ‘representation.’” Henri Bergson, Matter and Memory, trans. Nancy M. Paulino and W. Scott Palmer (New York: Zone Books, 1981), p. 9.

66. Susan Schuppli examines the procedures by which media artists in the archive of the ICTY were turned into evidence. As she follows the movement of videotapes, satellite images, maps, and recording devices through a juridical matrix that sorts, archives, catalogs, and presents them, these objects become what she calls “material witnesses.” That is: they bear witness not only to the alleged criminal events, but to the very sorting process they underwent in order to qualify as evidence: Susan Schuppli, “Entering Evidence: Cross-Examining the Court Records of the ICTY.” In Forensis, pp. 163–300. See also Susan Schuppli, A Material Witness: Forensic Media and the Making of Evidence (Cambridge, M.A.: MIT Press, forthcoming). The Model Court describes the ways in which new audio-visual and telemunication technologies, their material presence, digital properties, interruptions, and breakdowns outline the contemporary sphere of universal jurisdiction. Their film and installation Resolution 97/8HD (2007) follows the genocide trial of François Rusesabagina, a Rwandan national, in a distinct court of Porvoo, Finland. The court was set up in a local basketball court. Because the trial necessitated the remote interrogation of the accused via teleconference, the legal principle of habeas corpus, which usually denies the physical presence of the accused, was reinterpreted as the threshold condition of various technologies — bandwidth, resolution, and automatic light detectors — that would allow the remotely assembled court to see a person blush or sweat. Lawrence Abu Hamdan, Sotsel Menache Hansen, Lorenzo Pezzani, and Oliver Rees (Model Court). “Resolution 97/8HD: A Visual Essay,” in Forensis, pp. 320–17, http://www.forensis-architecture.org/file/resolution-97/8hd/. In the West, Nuremberg trials, in which twenty-one major Nazi war criminals faced judgment, films were screened as part of the process, and the proceedings were themselves filmed. American architect Dan Kiley supervised the refurbishment of the old Nuremberg court. The innovation was that the judges were placed to one side, facing the accused, while the central perspective was occupied by the screen, allowing the public a direct view of it. The screen served as a link between the accused, the judges, and the public. During his opening address Judge Jackson said, “We will show you these concentration camps in motion pictures, just as the Allied armies found them when they arrived.” A film, shot at Dachau on May 3, 6, and 7, 1945, by the Special Coverage Unit (SICOU) was screened on November 29, 1945, Christian Delage, “The Nuremberg Trials Confronting the Nazis with the Images of Their Crimes,” in Images of Conviction, pp. 13–29. For more on the use of media in the Nuremberg trials, see Cornelia Vysmkn, “File—Tele—Trials: Anatomy of a Medium,” Grey Room 10 (Winter 2003). The 1961 Eichmann trial in Jerusalem was the first use of video cameras in this process. See Roya Basman and Eyad Susan, Adolf Eichmann: The Nazi Criminal Who Organized the Destruction of the Jewish People (Turin: Einhaus, 2003). And see their film The Speculator: Portrait of a Modern Criminal (1993). In the context of the more recent process of the tribunals of the ICTR and the ICTY, videos are used extensively. On the media architecture of the ICTY, see Laura Kurgan, “Residue: ICTY Courtroom No. 1 and the Architecture of Justice,” in Alphabet City 7: Social Immunity, eds. Cornelius Hering and Lex Greenspan (Toronto: House of Anansi, 2000), pp. 122–29. Susan Schuppli, “Entering Evidence,” in Forensis. For more recent changes to the British court system, see BBC, “TV Cameras Allowed into Court of Appeal” October 31, 2013. http://www.bbc.co.uk/news/uk-24726666. The new building of the ICC, which opened in early 2009, was designed to dichotomize physical and media architecture.


69. In the human rights context, satellite images are always exclusively presented in pairs of “before and after” images, as in the following: In 2002, Entrea used satellite images to document village destruction and in 2007 it brought against Ethiopia in the International Court of Justice in The Hague. In 2013, the United States Committee for Human Rights in North Korea released a report based on satellite images of prison camps in North Korea titled The Hidden Gulag: Exposure North Korea’s Prison Camps. In 2004, Human Rights Watch’s report REHUN Disposable: Mass Home Demolitions in the Gaza Strip used satellite imagery to document the over 10,000 homes demolished. In 2007, Eyes on Darfur, a project pursued by Amnesty International and the American Academy for the Advancement of Science, documented eighties sites of destroyed villages in Darfur.

70. Kurgan, Glow Up at a Distance, p. 17. Andrew Herscher has suggested that the fact that these surveilllance technologies originate in military technologies, and are often used by the military, has a hybrid visual practice of surveillance and human rights witnessing that he has called "surveillance witnessing"—coupled with the fact that human rights violations are sometimes noted by states.
and militarizes as among the justifications for war, compromises the work of human right groups. 


During the 2001 US attack on Afghanistan, the Pentagon bought exclusive rights to pictures of the country produced by American Imaging's satellites, especially those made by the provider Ikonos. US spy satellites, keyholes, take photographic images estimated to be six to ten times sharper than the 0.5-meter resolution available from Ikonos in 2001. Duncan Campbell, "US Buys Up All Satellite War Images," Guardian, October 17, 2001, [https://www.theguardian.com/world/2001/ oct/17/physicsicalsarms.afganistan].

See Anne Zillers’s definition of the “event” of photography in Anne Zillers, The Civil Constitution of Photography (New York: Zone Books, 2003), p. 42. The event of photography, according to Zillers, is a set of political relations between those photographing, those being photographed, and those reproducing, circulating, interpreting, and making claims on behalf of images. For her, the photographic image is a material diagram through which it is possible to reconstruct the power relations at work in the photographic encounter.

The Lebanese artist Rabih Mroué showed what price photographing or viewing soldiers could entail. He collected videos from the Syrian civil war. One of them shows a group of soldiers moving along a street corner. One of these soldiers is seen looking out with the videographer, raising his gun, and then the camera records its own fall to the ground. Shouts are heard before the clip abruptly ends. Mroué’s "Holographic Resolution" is a lecture-performance by Mroué about the use of mobile-phone images during the Syrian revolution. Rabih Mroué. The Projected Resolution (2012). [https://visio [1982623]]. See also Hito Steyerl, The Wretched of the Screen (Berlin: Steingberg Press, 2012).

In the early 2000s, human rights groups such as Witness and B’Tselem in Palestine began distributing hand-held cameras within conflict zones, but the widespread availability of smart phones in more recent years has made that practice redundant. Keller Easterling, "Broadband, Extravaganza: The Power of Infrastructure Space" (London: Verso, 2013).


The term “image complex” was proposed by Meg McLagan and Yates McKee, eds., Sensitive Politics: The Visual Culture of Nonviolent Activism (New York: Zone Books, 2012), pp. 12, 22, 23. For them, it is the multiplicity of visual evidence, including photographs, maps, video, reports, charts, spaces, and borders, through which politics is brought to visibility.


This text was first published in Weizman and Weizman, Before and After. The Paris scene is described in Mary Warner Marien, Photography—A Cultural History (London: Laurence King, 2006), pp. 44–45.


This project was coordinated by Stefania Laura, with Christina Varvia as advisor.


Dan McQuillan, "Algorithmic States of Exception," European Journal of Cultural Studies 14,4–5 (August 2011), pp. 364–366. This is a project of the PATRN at Goldsmiths, University of London. The PATRN project was initiated thanks to a Proof-of-Concept Grant from the European Research Council in the framework of Forensic Architecture (2012–2015). Project architect: Francesco Selvaggi; project coordinators: Nick Axel and Andrea Rosa; major contributing authors: TEJKJA (PATRN from and the Digital Coalition (PATRN edition).}


54 While pathology deals with the individual body, epidemiology is concerned with the statistical measurement and spatial mapping of patterns of public health, disease, and mortality at the level of populations. What epidemiologists refer to as "indirect mortality" is the result of the destruction of the environmental conditions that sustain life. In an seminar organized by Forensic Architecture and Medecins Sans Frontieres-France, we focused on the way in which emergent techniques for collecting, analyzing, and preventing conflict-related mortality data have been used as tools of political advocacy—supporting calls for intervention or abstention in recent debates around conflicts such as those in Sudan, Darfur, Burma, the Democratic Republic of Congo, and Iraq, among others. The sessions showed that besides being based on medical science and quantitative analysis (and because of its high political stakes), epidemiological figures are highly contested. Statistics in this field are based upon choices regarding whose data should be measured and calculated, what should be left outside calculations, and what is deemed incalculable. See Forensic Epidemiology: Mortality Research in the Field and Forums of Contemporary Conflict, workshop organized by CRASH/MSF and the Centre for Research Architecture/Goldsmiths, December 7-8, 2012, http://www.forensic-architecture.org/seminar/forensic-epidemiology.

55 Nixon, Slow Violence, pp. 9, 40.


60 On May 13, 2013, Rios Montt was convicted of genocide and crimes against humanity. The court found that under his regime, the “civilians were considered public enemies of the state and were also victims of racism, considered an inferior race,” and it sentenced Rios Montt to eighty years in prison. The Constitutional Court of Guatemala overturned the conviction just ten days later, on May 20, 2013, and forced a retrial. In November 2013, in an attempt to bypass the legal blockade in Guatemala itself, Guatemalan prosecutors presented a petition to the Inter-American Commission on Human Rights in Washington. Forensic Architecture’s investigation was presented in this context. Trial International, "Efraín Rios Montt,” https://trialinternational.org/sites/jose-poe/poe/efrain-rios-montt.


101 On the Ecuadorian constitution of the rights of nature see Pablo Rivas, "Human Rights," in Forensic, pp. 553-71. Pablo Tavares, "Murky Evidence," Cabinet 41 (Fall 2001), pp. 19-20. A central reference in this discussion is Christopher Stone, "Should Trees Have Standing?"— Toward Legal Rights for Natural Objects," Southern California Law Review 45 (1972). These are other precedents such as rights to ecosystems granted in New Zealand. The first was the Whanganui River which, in a framework agreement between the Crown and the Maori people, was recognized as a person when it comes to the law. Sandra Postel, "A River in New Zealand Gets a Legal Voice," National Geographic, September 4, 2002.


PART TWO: COUNTERFORENSICS IN PALESTINE

1 Aristotle, Poetics, trans. Ingram Bywater, 2.149b.


occupations_fig_leaf. It claims that it demanded as an investigation in 278 cases, but since 2000, only in 25 instances were charges brought. Gili Cohen, “Citing IDF Failure to Bring Soldiers to Justice, B’Tselem Stops Filing Complaints on Abuse of Palestinians,” Haaretz, May 25, 2016, http://www.

haaretz.com/israel-news/newspremium-1.623582


btselem.org/press_releases/292/192_presumed_guilty. “Every year, thousands of Palestinians are brought before military courts on various charges, including entering Israel without a permit, stone-throwing, membership in an illegal association, violence, firearms-related offenses and traffic violations. The military court has jurisdiction over residents of the entire West Bank, including areas over which partial control was transferred to the Palestinian Authority.” Noam Shalit, “Conviction Rate for Palestinians in Israel’s Military Courts: 97.74%,” November 29, 2001, http://www1mag.

com/conviction-rate-for-palestinians-in-israel’s-military-courts-97-74-percent-28959.

The International Criminal Court (ICC) is a court of last resort and will step in where national jurisdictions have failed to address international crimes.” Coalition for the International Criminal Court, “Complementarity,” http://www.icclyb.org/?mode=complementarity.

The High Court of Justice (HCJ) intervenes in very few cases, and controversially so, leading legal scholars to claim that its rulings have helped regulate and systematize the occupation and make it more efficient. David Kretzmer, The Occupation of Justice: The Supreme Court of Israel and the Occupied Territories (Albany: State University of New York Press, 2002). Forensic Architecture has helped provide evidence that was presented in the High Court of Justice. The case for banning the use of white phosphorous munitions (see Part I, pp. 76-77) was presented there in 2002-2003. Legal battles regarding our report were still left unresolved when the military suddenly retreated and explained it will no longer use those munitions. In 2014, in the same court, we provided evidence in the case against the wall in Bethlehem (see Part I, pp. 125-27). Evidence in the case of the killing of Palestinian protester Babek Abu Rahma was presented there, beginning with the opening of proceedings in 2010, though the process is still ongoing.


In order to gain wide public support, the BDS movement has cast its campaign in legal terms, successfully conceptualizing the regime currently in place in Israel-Palestine as one that violates international law and requires a measure of transnational enforcement. The BDS movement used the ICJ case as its starting point. The original Palestinian civil-society call for BDS is BDS Movement, “Palestinian Civil Society Call for BDS,” July 9, 2001, https://bdsmovement.net/call. It begins: “One year after the historic Advisory Opinion of the International Court of Justice (ICJ) which found Israel’s Wall built on occupied Palestinian territory to be illegal” and continues: “We, representatives of Palestinian civil society, call upon international civil society organizations and people of conscience all over the world to impose broad boycotts and implement divestment initiatives against Israel similar to those applied to South Africa in the apartheid era.”


The trend of legal scholarship known as “critical legal studies” emerged together with other post-structuralist discourses at the end of the 1980s. Critical legal scholars argued to expose the way the law is made, the workings of power in the making and enactment of law, and to challenge the law’s narrative account and offer an insight into its internal contradictions and indeterminacies. It was, broadly speaking, a critical, left-leaning practice that attempted to deploy law at the service of a socially transformative agenda.

Daniel Ayallon, “Challenges to Israeli Foreign Policy,” an article adapted from his talk before the Israel Council on Foreign Relations, January 8, 2000, http://www.israelcfx.org/documents/4-13-

Daniel-Ayallon.pdf.


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For Forensic Architecture: Eyal Weizman, Nick Axel, Steffen Krämer, Lawrence Abu Hamdan. See http://www.forensic-architecture.org/see/nakba-day-kilings.


The unedited six-hour-long footage has been shared with a number of news agencies and several human rights organizations who have verified the video as accurately portraying events on that day. As a children’s rights organization, DCI-Palestine explained that their first priority is the best interests of the child. Publicly releasing the full video could allow others to identify specific children where faces are visible. Given the widespread and systematic ill-treatment that exists in the Israeli military detention system, DCI-Palestine does not feel that it can responsibly release the full-length CCTV footage. Eyewitnesses at the scene, including journalists and photographers, have provided statements verifying that the video accurately depicts the day’s events. See https://www.youtube.com/user/DCIPS.


On June 6, Al-Quds University’s Institute of Forensic Medicine in Abu Dis undertook the exhumation in the presence of US, Danish, and Israeli pathologists. No bullet was found in the body, but the examination identified both the entry and exit wounds of live fire as the cause of death. DCI-Palestine, "Use of Live Ammunition Confirmed in Niswah Shooting," June 12, 2012, http://www.underscore.org/newsview/2012/06/12/use-live-ammunition-confirmed-niswah-shooting.


As Human Rights Watch noted: "The Israeli military has used at least one type of assailant-filming attachment, produced by Israeli Military Industries, that allows forces to fire rubber bullets, but also to fire live ammunition without removing the attachment. A brochure states that the 22-centimeter long "launcher" can be "attached to any rifle with NATO flash suppressor" and allows "immediate 5.5-mm lethal firing capability without removing adapter." Human Rights Watch, "Israel: Killing of Children Apparent War Crime,"

Ibid.


On August 18, 2015, our report was presented in the presence of Siam Nawara in a special event convened at the US Congress by Betty McCollum, a Democratic representative from Minnesota, who had also, in what was described as "probably the statement most in support of Palestinian rights to have been made on the capital," sent a letter to the State Department: "The murder of Nadeem Nawara and Mohammad Daher only highlight a brutal system of occupation that devalues and dehumanizes Palestinian children. The letter is available at http://mccollum.house.gov/sites/mccollum.house.gov/files/documents/Dodd%20State%20-%20Nadeem%20Nawara%20-%20Mohammad%20Daher%20-%20US%20Congress%20-%20Nawara%20-%20Nawara%20-%20Shooting%20-%2008%2018%2015.pdf.


When the ratification documents were signed, it was the only point of consensus between all Palestinian factions, which are otherwise bitterly divided. The ICC can try persons of any nationality for crimes committed on the territory of the states that have signed its Rome Statute. Now that Palestine has joined the court, Israeli politicians and officers could be prosecuted for war crimes and crimes against humanity committed in the West Bank and Gaza, even though Israel is not a member of the ICC. The state of Palestine recognized the court’s jurisdiction in 2011, upgrading it from “permanent observer” to “non-member observer state,” thus opening up the possibility of its membership in the court. See George Bushar, “Palestinian Considerations for Accession to the Rome Statute,” Journal of Palestine Studies, October 20, 2004, http://www.palestine-studies.org/institute/fellow/palestinian-considerations-accession-rome-statute/.

Mahmoud Awad and Jonathan Kurbat, "Nonviolent Resistance in Palestine: Pursuing Alternative Strategies," Electronic Intifada, March 26, 2002, https://www.electronicintifada.net/content/nonviolent-resistance-palestine-pursuing-alternative-strategies/4924. A poll by the Palestinian Center for Policy and Survey Research in June 2004 found that 90 percent of Gazans and the majority of West Bank residents wanted the Palestinian Authority to go to the ICC. Poplar pressure on the PA to join the ICC increased after the breakdown in peace talks in April 2004 and certainly after the 2001 Gaza war.

During the 2000 war, all Palestinian factions agreed on a declaration stating that they are all prepared to deal with the personal and national repercussions of joining the ICC. The heads of the Islamist organizations (Hamas and Islamic Jihad) signed last, but they signed, extending the court’s jurisdiction over the occupied Palestinian territories in order to allow charges to be brought against Israel, in full recognition of the fact that this might involve the risk that charges also will be brought against Palestinians. George Bushar, panel discussion, "Operative Protective Edge: Legal and Political Implications of ICC Prosecution," George Mason University, October 20, 2014. Status Update 3.1, http://www.statushoorah.org/operation-protective-edge-the-icc.html. Previously, Israel and its Western allies had threatened to withdraw financial aid from the PA if it pursued membership. The US Senate, for example, debated legislation in 2012 that would cut off millions of dollars in assistance to the PA, and the EU has reportedly said it would withhold aid for rebuilding Gaza after the latest assault if the PA were to bring a case against Israel. Donna Cassata, "US Lawmakers Threaten to Hold Aid to Palestinians If They Use UN Upgrade against Israel," Times of Israel, November 29, 2012, http://www.timesofisrael.com/us-lawmakers-threaten-cutoff-of-american-aid-if-they-use-un-upgrade-against-israel/. David Hearst, "Exclusive: Hamas Pushes Abbas to Join ICC," Middle East Monitor, August 12, 2014, https://www.middleeastmonitor.com/19112-exclusive-hamas-pushes-abbas-to-join-icc.


But, suffering from a great shortage of living space, when bombardments end, residents of the Gaza Strip immediately start clearing up the rubble and use whatever can be salvaged to rebuild their homes. Life is more important than evidence. For instance, some individuals pick up fragments of munitions as souvenirs or to use to make practical or decorative objects. See, for example, Business Insider, "Remnants of War Become Art in Gaza," October 14, 2012, http://www.businessinsider.com/atp-remnants-of-war-become-art-in-gaza-2012-10787-E.


Interview by Amnesty International fieldworker with Dr. Majed Abu Taiba, August 14, 2014.
60 This was line with the ceasefire terms, which stated: "During this period, civilians in Gaza will receive urgently needed humanitarian relief, and the opportunity to carry out vital functions, including burying the dead, taking care of the injured and reacquiring food supplies. See United Nations, "Joint Statement by the Secretary-General and US Secretary of State John Kerry on Humanitarian Ceasefire Announcement."

61 The Qassam Brigades, Hamas’s military wing, claimed that the encounter took place at 7:30 a.m. At 7:34 a.m., they tweeted: "At 7:00 a.m. a group of [Hamas] fighters clashed with [Israeli] forces east of Rafah and caused many injuries and death to them." Quoted in Blumenthal and Deger, "Who Broke the Ceasefire?" The capturing of the Israeli fighter took place during this fire fight. They later explained, before the ceasefire had come into effect: "Zionist Enemy Forces used the talks about a humanitarian ceasefire to advance troops more than two kilometers inside the Gaza Strip to the east of Rafah. Our assessment is that one of our deployed ambushes clashed with the advancing troops." Statement clarifying the Zionist Enemy’s Violation of the Humanitarian Ceasefire, the Claim of the Disappearance of One Soldier, and the Clashes East of Rafah. In "Press Release Al-Qassam Brigades Regarding Breach of Ceasefire and Alleged Capture of Israeli Soldier." "

62 Yoav Zeaitz, "Givati Commanders from the Rafah Battle "Clear Conscience,"

63 An Israeli soldier already had been captured on July 29, 2014, causing celebration on the Palestinian side, but the military declared that he was dead when taken.

64 Three parts of it made public by the military were released in order to convince the Israeli public that an IDF criminal investigation into "possible war crimes" committed by the Givati Brigade that day would be redundant. "Exclusive: New Details about the Rafah Battle," IDF Radio (Gali Tshabal), April 14, 2015, http://glz.co.il/936-18494-he/Galatz.aspx, in Hebrew; Amos Harel and Gil Cohen, "You Will Not Hear How the Soldier Was Caught," Haaretz, April 9, 2015, http://www.haaretz.co.il/news/politics/premim-1.2606581, in Hebrew.


66 Zilu, "Givati Commanders Who Fought in Rafah Conscience."


68 In 2002, Israel instituted the "Incarceration of Unlawful Combatants Law." In an imitation of the similar American law, prisoners were no longer treated according to criminal law, but could be held "as long as the hostile acts of such force against the State of Israel have not yet ceased." Incarceration of Unlawful Combatants Law 5762-2002, http://www.jewishvirtuallibrary.org/jsource/Politics/IncarcerationLaw.pdf. Only a few were charged according to this law. "The Third Geneva Convention for the arrangement of care of prisoners of war or Convention (III) Relative to the Treatment of Prisoners of War (Geneva, 12 August 1949) declared combatants, though they have killed intentionally, are not individually responsible for the killing they have done, and could not be tried and made liable for the death and destruction they caused." Merav Mazar, introduction to Captives, ed. Merav Mazar (Jerusalem: The Van Leer Jerusalem Institute and the Zalman Shazar Center for Jewish History, 2011), p. 24, in Hebrew.

69 Gust Ehrman claimed that those released contributed to the erosion of the "First Initiative" in 1995; Rosen Bergman, "Prisoners of War and Those Reported Missing: Conclusions Drawn From the Israeli Cases," in Captives, p. 204, in Hebrew.

70 In 1996, the bodies of two Israeli soldiers were exchanged for the bodies of 123 Lebanese fighters. In 1998, the remains of a single Israeli soldier were exchanged for sixty-five Lebanese prisoners and the bodies of forty. In 2004, an Israeli civilian and the bodies of these IDF soldiers, captured in 2000, were exchanged for over 240 Palestinian and Lebanese prisoners and the bodies of fifty-nine Lebanese. In 2001, the remains of an Israeli civilian were exchanged for a Lebanese civilian, two Hezbollah prisoners, and the remains of two Hezbollah fighters. In June 2006, Israel released a Lebanese prisoner in exchange for the partial remains of up to twenty Israeli soldiers killed during the 2006 Lebanon War. In July 2008, the bodies of two Israeli soldiers, captured in a cross-border raid in July 12, 2006, were exchanged for a Lebanese prisoner, four Hezbollah fighters, and the bodies of 195 fighters. In October 2010, an IDF soldier was exchanged for 1,027 Palestinian prisoners held in Israel.

71 Yossi Peled, Gabi Ashkenazi, and Yakov Amidor drafted the original command. The order generated a protest within the IDF. At least one battalion commander refused to transmit it to his soldiers, arguing that it was flagrantly illegal, and in a number of cases, levied doubts about the morality of the order. Some soldiers said they would refuse to open fire on their counterparts. Nevertheless, some soldiers said that even after the command was reviewed, they were briefed in the spirit of the original procedure. Sara Lebovich-Dar, "The Hannibal Procedure," Haaretz, May 21, 2003, http://www.haaretz.com/the-hannibal-procedure-1.5182.

72 See footage of the video on the website of Israel’s channel. The Seventh Eye dated August 14, 2014, http://www.theseveye.org.il/m82/m82.html, in Hebrew.

73 The Third Geneva Convention, which deals with the treatment of prisoners of war by those who imprison them, does not regulate the military’s duties in relation to its own combatants.

74 In 1995, a tank commander said: "In the briefings, we were told more than once that the military goal in the event of an abduction is the death of the soldier, because the IDF prefers a dead soldier to an abducted soldier." The Seventh Eye, August 14, 2014, http://www.theseveye.org.il/m82/m82.html, in Hebrew. See also Amos Harel, "After Shalit. Some IDF Officers See a Dead Soldier as Better Than Abducted," Haaretz, November 21, 2001, http://www.haaretz.com/after-shalit-some-officers-see-a-dead-soldier-as-better-than-abducted-1.98329.

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We constructed our models based on satellite images as well as an OpenStreetMap, a free online map, a kind of Wikipedia of maps, a crowd-sourced project that allows activists to contribute their time and skills to drawing plans of uncharted cities. We approximated the height of the buildings based on the length of their shadows as seen in different satellite photographs.


Further analysis of Frelades and other satellite data was undertaken with Dr. James Van Den Hoven, a scientist working on remote sensing who was based at the Jet National Aeronautics and Space Administration (NASA) Goddard Space Flight Center in Washington. He is also a "geospatial intelligence leader" in the geography program at Oregon State University.


In another diary entry, Olayan looks at a mushroom cloud that "rose hundreds of meters high. When we left the [Gaza] strip they told us that they could see this mushroom in Beirut still 40 kilometers away." Olayan. "I Must Take the Thoughts of Dying Out of My Head."


Lake Howard, "On the Modification of Clouds, and on the Principle of Their Production, Suspension, and Destruction; being the Substance of an Essay read before the Asenwckian Society in the Session 1802-1803." Philosophical Magazine and Journal of Science 16 (1803) and 17 (1804).


In his poem "The House as Casualty," Palestinian poet Mahmoud Darwish (in the translation of Catherine Cobham) lists the contents of a destroyed house: "stone, wood, glass, iron, cement, cotton, silk, linen, papers, books. . . plates, spoons, toys, records, taps, pipes, door handles, fridges, washing machines, flower vases, jars of olives and pickles, timed food. . . Salt, sugar, spices, boxes of matches, pills, contraceptives, antidepressants, strings of garlic, onions, tomatoes, dried oak, pine and lentils . . . rent agreements, marriage documents, birth certificates, water and electricity bills, identity cards, passports, love letters . . . photographs, toothbrushes, comb, cosmetics, shoes, underwear, sheets, towels." The dust that remained after the collapse of the twin towers on 9/11 had to be analyzed to identify the different substances it contained. In her essay "Impure Matter," Susan Schuppli reproduces a chart with the results. It lists 45.1 percent rockwool/ fiberglass, 30 percent composites such as plastic and concrete, 21.1 percent charred wood, 2.1 percent paper fibers, 2 percent synthetic fibers, 1.4 percent glass fragments, 1.4 percent natural fibers, 1 percent of human remains, and drugs (from the bodies), paint, foam, and asbestos each under 1 percent.

When the military uses controlled detonation of tunnels, using about fifty kilograms of explosives, "the shock waves move through it and collapse the entire tunnel. And then a kilometer away, on the other side, you see the tunnel's other shaft fly up in the air. You blow up a house here, and sometimes you see the effects half a kilometer away." Breaking the Silence, This Is How We Fought in Gaza 2014 testimony p. 85. Another testimony referred to more munitions: "You insert ten mines — 100-150 kilos — and it blows up the shaft. It simply collapses in on itself." Ibid., testimony 33 p. 132. Still, this is much less than the effect that a one-ton bomb would have.


Bibbit, "Interview with Lieutenant Ethan." 


"Interview with Fund Earth Aid induded in "From Deep Under," Udita.

Ram, "Exclusive: New Details." 

Olayan, "I Must Take the Thoughts of Dying Out of My Head."

"Press Release Al Qassam Brigades Regarding Break ofations and Alligned Capture of Israeli Soldier."

"Gravit Commanders from the Rafah Battle Clear Conscience." 


Ibid.

According to Israeli Wees, the former chief military rabbi, "even when we don't have physical evidence, there are halakhic [Jewish-theological] parameters that allow us to pronounce death without a body or other remains." Ibid.


Zvi Barlov, "A Nightmares Called Hanuka."


There were many other bombings during and after the capture of Lieutenant Goldin that were allowed according to what Amnesty International has called Israel's "gloves-off policy" by which targets that were previously not authorized because of the expectation for high levels of collateral
damage were allowed under the logic of the Hannibal Directive's attempt to generate deterrence. In one such case, on August 3, the military attacked a UN compound in Rafah where three thousand civilians had taken refuge, killing eleven, five of them children.


**PART THREE: GROUND TRUTHS**

An earlier version of this text was published by Eyal Weizman and Faraz Sheikh as The Conflict Show: Colonialism as Climate Change (Göttingen and New York: Steidl and Cabinet Books, 2010), translated into Hebrew as Eviatar: See Her Imut (Tel Aviv: Israel Books and Zochrot, 2006).

Thanks are due to Nuri al-‘Uqbi, Sayyah and Salim al-Turi, Oren Yiftachel, Haifa Noach, Neve Gordon, James Van Der Hoek, Eduardo Cadava, Shira Sheikh, Liz Jobey, and Adrian Lahoud for their help. Jacob Burns provided good insight throughout. For help in interpreting the aerial images thanks go to Eran Atzmon and another prominent aerial photography analyst who prefers to remain anonymous. Michael Koenen and his team at Orientation in Jerusalem provided the translation.

Members of the al-Turi tribe had bought land in the eastern part of al-Arakib from the al-‘Uqbi family in 1965 and had begun to use it as a cemetery in 1944.

1 The association has dealt with a host of different matters beyond those of land rights, including, after the Israeli minister Montebachman-Venson's exposure of Israel's nuclear program in 1998, anti-nuclear activism.

2 Israeli High Court of Justice Civil Case 7/01, in Hebrew.


5 Yehezkel Lein and Eyal Weizman, Land Grab: Israel's Settlement Policy in the West Bank (Jerusalem: B'Zelem, 2002). We wrote: "Land collectively owned by several villagers was often registered to the one villager that could read and write. Land merchants and local Ottoman administrators took the opportunity to register large areas of land to their own names. Falsified and Bedouin farmers who cultivated lands for generations became tenants of absentee owners. It was from the absentee owners that the first wave of Zionist land purchase took place, and farmers were legally "displaced from their lands." See http://www.haaretz.com/online edition/200003_land_grab-eng.pdf.


7 What Oren Yiftachel has called the "dead deader doctrine" is an Israeli version of the colonial principle of terra nullius ("empty land," void of sovereignty or ownership)—a legal principle originating at the 1895–98 Berlin Conference that disengaged native forms of government cultivation and settlement and dispossessed indigenous people in Africa, Australia, and other places throughout the colonial world, based on the argument that they were "part of the natural environment." Oren Yiftachel, Sandi Kedar, and Ahmad Amara, "Challenging a Legal Doctrine: Rethinking the Dead NIRU Politics, Law and Government," Mishpat U-Mottomah 30 (2012), pp. 749-761, in Hebrew. The terra nullius law was revoked in Australia in a milestone judgment handed down on June 3, 1993, in the landmark case of Mabo v. Queensland in the Australian High Court. The court determined that under certain circumstances, indigenous land rights (native title) had not been extinguished by white European settlement and indeed, under common law, still existed in some parts of what is now called Australia in the latter years of the twentieth century. On terra nullius, see Sven Lindquist, Torre Niluss: A Journey Through No One's Land, trans. Sarah Death (New York: New Press, 2007). The legal battles of the Bedouins are thus related, Yiftachel explains, to those of indigenous peoples in countries such as Australia, Canada, South Africa, India, and Brazil. For comparison, see also Patrick Wolfe, "Settler Colonialism and the Elimination of the Native," Journal of Genocide Research 6 (4), September 2004, pp. 397-409, and Yiftachel, Kedar, and Amara, "Challenging a Legal Doctrine," p. 27.


10 This part of the book—making the case for the Bedouins of al-Arakib—evolved from The Conflict Showroom, an earlier text I wrote around Faraz Sheikh's aerial photographs of the Negev. What follows here is an extended version that includes more research, as well as archaeological, documentary, cartographic, and photographic evidence. Some of the aerial photographs in what follows were produced by cameras connected to kites flown by Public Lab and the inhabitants of al-Arakib. See Weizman and Sheikh, The Conflict Showroom: Faraz Sheikh's "Desert Blooms" series can be found in Faraz Sheikh, Inearer (Göttingen: Steidl, 2013).

11 There are various other methods of establishing the border of aridity based on different modes of calculating average levels of rainfall and distribution of temperature and evaporation (or evapotranspiration — water lost in the atmosphere from plants). Almost all maps of Palestine from the nineteenth century mark the threshold of the desert in one way or another. Most often the map of Palestine is framed in such a way as to leave out the desert south of Beersheba. One of the first attempts at annotating the threshold of the desert was on Heinrich Kiepert's Map of Palestine (Neue Handkarte von Palastina), where the desert is colored in yellow in contrast with the green.

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A recent UN report expressed grave concern about the situation of these displaced. "The number of Bedouins living below the poverty line, their living and housing conditions, their level of malnutrition, unemployment and infant mortality are all significantly higher than the national averages. They have no access to water, electricity and sanitation and are subjected on a regular basis to land confiscations, house demolitions, fines for building "illegally", destruction of agricultural fields and trees, and systematic harassment and persecution." Israel, Additional Information (2003), in Concluding Observations of the UN Committee on Economic, Social and Cultural Rights: Eighty to Twenty-Seventh Sessions (1993-2003), ed. Leif Holstrom (The Hague: Kluwer Law International, 2003), pp. 37-20.

Nevatim, one of the busiest of Israeli military air force bases, has been expanded in the middle of the former unrecognized settlement of Bedouin area.

This military base is currently under construction between the villages of Dimona and Yeruham. Planned for thirty thousand army personnel, it was named after Ariel Sharon. Parts of the base are already operative. When completed, the base will house the Israeli Defense Force's Armaments School, Logistics Training School, Military Police School, and other military training centers. The base will include training facilities, sports areas, a shopping mall, synagogues, hotels, cinemas, and entertainment facilities. Peter Arag, "Another Step to the South: Training Campus Headquarters Founded," in Hebrew, Israel Defense Forces, November 13, 2014, http://www.idf.il/n33-21695.php?showArags, in Hebrew There are Bedouin villages that have been declared illegal east of the site and also a Jewish-owned ranch. The site is bordered by a closed military zone with some families of the unrecognized Bedouin village of al-Mabahbuh contained within it. The government plans to move the residents to Segov Shalam/Shabh al-Salam, one of the Bedouin townships.


Getron, "In the Negev," Ni’mat al-Tipi, interview, July 20, 2014.

ibid., p. 147.

Farkhan Shibli, quoted in ibid., p. 149.


67 Alganzi, "The State of Israel vs. Citizens of Israel."
68 The decisive moment in the trial happened when the plaintiffs' lawyer read out the producer's own label: "Precaution...wear gloves, avoid breathing in the fumes...wash with water and soap any part of the body that came into contact with the chemical...avoid animal feeding over an area sprayed by the chemical or their entry for seven days from the time of the spraying."
length of its border to Egypt. Many desert thresholds are being fenced up. This process takes place not only in the Niger, Gaza, and the West Bank, but also along other aridity lines in such places as Saudi Arabia, the western Sahara, and the US-Mexico border (an aridity line separates the American Southwest from Mexico through the notorious frontiers of El Paso/Ciudad Juarez and San Diego/Tijuana). Guatemalan architect Pedro Cruz has called these bends of conflict zones "the political equator." Political Equator, http://politicalequator.blogspot.com.

Geographic determinism is the theory that the characteristics of culture (sometimes also of race) are shaped by geographic conditions. Elsworth Huntington, one of the most visible proponents of geographic determinism, proposed that the fall of the Roman Empire was precipitated by reductions in agriculture output caused by shifts in the aridity line. Elsworth Huntington, World Power and Evolution (New Haven: Yale University Press, 1933).


See the "Ecologie" section in Fontenelle, pp. 481-493.

The term "Anthropocene" was proposed by Paul Crutzen in 2000. Since 2008, geologists have proposed the formal adoption of the Anthropocene epoch (still pending).

An algorithmically made estimation of civilian casualties is now presented to commanders by various computer programs before a mission to determine the correct "propotion" of collateral damage and to try to avoid "excessive death." But as has become apparent from Pakistan through Iraq to Gaza and Lebanon, the supposedly unintentional killing of civilians can also be used by militaries as an effective strategy, a mode of leveraging power, articulated through fear, punishment, deterrence, and retribution. "We will wield disproportionate power against every village from which shots are fired on Israel, and cause immense damage and destruction... This is not a suggestion. This is a plan that has already been authorized," Gabriel Shobu. "Disproportionate Force: Israel’s Concept of Response in Light of the Second Lebanon War," Institute for National Security Studies Insight 74, October 2, 2008. http://www.ins.org.il/index.aspx?id=67525&Art&aid =6191. The United Nations Fact-Finding Mission on the Gaza Conflict (the Goldstone report) also insisted that Israel waged "a deliberately disproportionate attack designed to punish, humiliate and terrorize a civilian population, radically diminish its local economic capacity both to work and to provide for itself, and to force upon it an ever-increasing sense of dependency and vulnerability." United Nations, Human Rights in Palestine and Other Occupied Arab Territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict, A/63/138, September 29, 2009, p. 409, http://wwwפרטאות-终止.com/english/bodies/brcouncil/docs/12session/A-63/138.pdf. Eyal Weizman, The Least of All Possible Evils: Humanitarian Violence from Acre to Gaza (London: Verso, 2011), pp. 20-21.

An exception to this argument has been the position of the Indigenous Environmental Network in Paris, where indigenous peoples staged a direct action. "We, Indigenous Peoples, are the redline. We have drawn that line with our bodies against the privatization of nature, to dirty fossil fuels and to climate change. We are the defenders of the world's most biologically and culturally diverse regions. We will protect our sacred lands. Our knowledge has much of the solutions to climate change that humanity seeks. It's only when they listen to our message that ecosystems of the world will be renewed." Tom Goldtooth, executive director of the Indigenous Environmental Network, quoted in Play and Idea. "Reclaiming Streets from Paris to the World," ODA. OCPD. Paris Blog Part Two of Three. December 11, 2015, http://benjaminshimberead.blogspot.com/2015/12

/reclaiming-streets-from-paris-to-world.html. Similarly, the slogan of several low-lying island nations is "1.5 to stay alive." As Naomi Klein notes, "At the last minute, a clause was added to the Paris Agreement that says countries will pursue efforts to limit temperature increases to 1.5°C. Not only is this non-binding but it is a lie: we are making no such efforts. The governments that made this promise are now pushing for more fracking and more tar sands development—which are utterly incompatible with 2°C, let alone 1.5°C." Klein, Let Them Eat Brains.


Hugh Williamsen, "An Attempt to Account for a Change in Climate Which has been Observed in the Middle Colonies in North America." Transactions of the American Philosophical Society (January 1, 1795–January 1, 1797). http://www.jstor.org/stable/2050367?q=2&page_scan_tab_contents. Williamsen was the first to have used the term "change of climate." He also proposed a programmatic change of climate by landscape modifications. "In order then that we may be able to form an estimate of the heat of any country, we must not only consider the latitude of the place, but also the face and situation of the country, and the winds which generally prevail there. If any of these should alter, the climate must also be changed. The face of the country may be altered by cultivation, and a transformation of the general cause of winds will convince us that their course may also be changed," (p. 273). Jefferson claimed that this is "a change in our climate... it taking place very sensibly." Thomas Jefferson, Notes on the State of Virginia, ed. William Peden (Chapel Hill: University of North Carolina Press, 1955). p. 80. Noah Webster published a rebuttal in two speeches collected and published as Noah Webster, On the Supposed Change in the Temperature of Winter (Connecticut Academy of Arts and Science, 1824). For more on the Webster-Jefferson debate, see Joshua Kendall, "America's First Great Global Warming Debate," Smithsonian.com, July 12, 2013, http://www.smithsonianmag.com/history/americas-first-great-global-warming-debate-286534. Nineteenth-century forest policies were based on "destructionism" (extreme dryness) beliefs that deforestation caused local, regional, and even continental drought. None of those theories were thought through about the planet as a whole. See J.R. Fleming, Historical Perspectives on Climate Change (Oxford: Oxford University Press, 1998). Richard Grove, Ecology, Climate and Empire: Colonialism and Global Environmental History, 1450-2004 (Winchester, UK: White Horse Press, 1997).


It is an implicit continuation of these climatic experiments, Americans Cold War scientists tried to develop ways of weakening the weather by artificially generating clouds for floods or driving them away to make droughts. There were also stranger contemporaneous NASA studies that sought to find ways of making different planets and moons—including Venus and Mars—open to human inhabitation by instigating climate-changing events there. These debates, undertaken from the late eighteenth century to the late twentieth, are at the root of today’s earth-system science. On the weaponization of the environment: Between 1967 and 1972, a US Air Force effort called Operation Popeye attempted to wash out parts of the North Vietnamese resupply route known as the Ho Chi Minh Trail by seeding clouds over Laos during monsoons. Among the largest efforts was Project Stormfury, which tested techniques for seeding or extinguishing tropical cyclones." Paul N. Edwards, A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming (Cambridge, MA: MIT Press, 2001). p. 359-60.


Tavares, *Over the Ruins of Amazonia.*

Tal. *Pollution in a Promised Land,* p. 6a.

Ibid., p. 266.

Human Rights Watch, *Prison Conditions in Israel and the Occupied Territories, 1991: Middle East Watch Report,* pp. 18 and 64, https://www.hrw.org/report/1991/israel/jerusalem/israel91/israel91idr. Because by international law Israel is forbidden to remove the occupied population from the Occupied Territories, the prisoners have been defined, for operational and legal purposes, as extra-territorial islands of occupied territory inside Israel.


Ana S. Issar and Mattanyah Zohar. *Climate Change — Environment and Civilization in the Middle East* (Berlin: Springer, 2004), p. 23. Issar and Zohar reconstruct the paleoclimatic scenario for the post-Roman-Byzantine period as follows: “a series of dry years with an annual average precipitation of less than 40 mm over the surface drainage basins caused the olive crop to diminish to a level where it was no longer economical to cultivate. A few consecutive years of drought may even have caused many trees to dry up and die. Thus, the olive plantations on the terraces were abandoned and the natural vegetation of dwarf oak, pistachios, etc., returned to dominate the landscape. With the return of the natural mesquite type vegetation, the permanent inhabitants could shift to an economy of raising goats and sheep, and in good years to sow the terraces for grain and fodder” (p. 263). See also H. J. Bruns, *Ancient Desert Agriculture in the Negev and Climatic-Zone Boundary Changes During Average, Wet and Drought Years,* Journal of Arid Environments 86 (November 2010): 26; Revah, "The Romerization of the Negev, Israel: Geographical and Cultural Changes in the Desert Frontier in Late Antiquity," *Journal of Historical Geography* 23:3 (July 1997), pp. 267-83.

Michael Evenari, Leslie Shanan, and Nashat Soliman, *The Negev: The Challenge of a Desert* (Cambridge, MA: Harvard University Press, 1971), "In those dry field trips were made in convoy style, with about one-fifth of the party acting as security guards in case of an attack by nomad... Many of us grew beards" and "would look like gun-packing frontiermen in the Wild West" (p. 1).


We asked a neighboring Bedouin sheikh to assist us. He promised to send seven of his Bedouins with their camels. On the morning of December 4, twenty-one Bedouins appeared with their camels and a few goats. Soon the farm, which had been abandoned for many centuries, came to life as the camels began to drag their antiquated wooden plows. Soon the whole field was green and now we felt that we had made the first step on the road to our goal." Evenari, Shanan, and Tatnai, *The Negev,* p. 4.

Civil Case 706/08, Al-Uqui v. The State of Israel, December 7, 2009 (my summary of some of the contents of the testimony).

Hafiz (my translation from Hebrew).


Bruce Granville Milne, *Oral History on Trial: Recognizing Aboriginal Narratives in the Courts* (Van- couver: University of British Columbia Press, 2001). Al-Uqui’s new representative, the human rights lawyer Michael Sfar, who took over from Gabo in early 2000 in an attempt to turn the tide, responded to this allegation by stating that by bearing land claims for the first time almost sixty years after dispossession, a period during which the village elders who could have personally
tested had passed away, the state was responsible for "evidentiary damage." Interview with Michael Sfar, Tel Aviv, April 5, 2014. This argument made no impression on Dovrat.


112 Ibid.

113 In its summation of the al-Arajeh case, the state added: "It is not enough to have a tent encampment, temporary accommodation, a few dwellings, or scattered buildings that are not continuous and contiguous in order to qualify as a settlement." Dovrat, final verdict in Al-Ughi v. The State of Israel. However, as Yifachel et al. explain, nowhere did the Ottoman law mention "a village" but rather used the term "inhabited location" and therefore did not define what a settlement is. Yifachel, Kedari, and Amara, "Challenging a Legal Doctrine," p. 39.


116 Interview with Michael Sfar, Tel Aviv, April 5, 2014.

117 Literary critic Franco Moretti has developed a distant reading approach. See Moretti, Distance Reading (London: Verso, 2013).


121 Dovrat, final verdict in Al-Ughi v. The State of Israel.


124 Ibid., p. 390.


127 Ibid.

128 It was only in April 1876 that the British consulate general to "Beirut" was pleased to report to the Queen that the prohibition on the export of grain from Syria and Palestine had finally been removed. "Report by Her Majesty's Consulate General in Beirut," London Gazette, April 25, 1876, Issue 2960, 2962. Another account describes the situation this way: "Between 1866 and 1871 Hermon was plagued with a severe drought. Food was so scarce that the little available sold for ten times the normal value. Although the rains came in 1871, there was no eating of the famine, for the farmers had no seed to sow. The Jewish community was obliged to borrow money from non-Jews at exorbitant interest rates in order to buy wheat for their flock. Their leaders finally decided to send their eminent Chief Rabbi Eliahu (Sofer) Meni to Egypt to obtain relief." Isaac Samuel Emmanu-

In The Conflict Shoreline, I wrote, erroneously, that “PS” meant Palestine Survey. The survey had a crucial part to play in the history of the area less than a year after the photographs were taken, the Anglo-American Committee of Inquiry used these aerial images to calculate population numbers and levels of cultivation in order to draft one of the proposed lines of partition of Mandatory Palestine. In the Beersheba district alone, they identified 8,722 tents and 3,395 stone houses (bitya) belonging to the Bedouin tribes of the area. Yiftachel, Keidar, and Amera, “Challenging a Legal Doctrine,” p. 100. A map, “Distribution of the Nomad Population of the Beersheba Sub-district” was compiled from information that included the aerial photographs of 1945. Background information on the compilation of this map can be found in Appendices 3 and 4 of United Nations, General Assembly, Ad Hoc Committee on the Palestinian Question, Report of Sub-Committee 2 (1947), A/AC.14/32, https://unispal.un.org/pdfs/AAC14/32.pdf.


In 1945, in the area of the photographs, there was an extensive and continuous Bedouin agricultural settlement, save for a small percentage of the land where the slopes of the streams were too steep. Along the streams there are wells and cisterns. An extensive network of routes connect the clusters of houses, including stone houses, tent encampments, farmyards, small gardens, livestock pens and shelters, storage for agricultural produce, and piles of hay and other produce. In her March 15, 2010, verdict against the plaintiffs, Judge Dovrat claimed that the photographs were inconclusive in proving the existence of a permanent Bedouin settlement. The people, she suggested, could have just panned by and cultivated temporarily. ‘Although the expert claimed that there was a continuous agricultural settlement on site, it became apparent that it was of very low density,’ Dovrat, final verdict in Al-Liqi vs. The State of Israel, p. 17.

The following is a more detailed technical explanation: For the making of the Fort Said survey series, the RAF reconnaissance planes were photographing at an altitude of 15,000 feet. The focal length of the lens was 12 inches or 1 foot. The scale of the film is obtained by dividing the altitude by focal length. The scale of the negative film is 9 inches or 228.6 millimeters, the area captured on each separate negative film is about 3.4 by 3.4 kilometers, or 3.5 square kilometers. The resolution of the film used by the RAF is 35 line pairs per millimeter. This unit l/mm, measures how many pairs of alternating black and white lines would fit within a millimeter on a negative. If there are 35 line pairs, each the width of at least a single grain, then in a single millimeter on the film there are 70 grains. The size of a silver salt grain is 0.042 millimeters. At a scale of 15,000 the size of the grain represents 214 millimeters of ground. However, given the atmosphere, the effective resolution is 50 centimeters per grain.

El Al-Zaytoun, interview, April 29, 2011.


Besides the 1945 photographs, the Regavim report also presented Israeli Air Force photographs from 1956, 1965, and 1967 and a satellite image from 2010. It is only in the 1945 photograph, and from that date on, Regavim’s report claimed, that it was possible to notice the cemetery in its early stages and a single tent next to it. Regavim’s conclusion is that “the ‘historic’ village al-Araqib, which the Bedouin claimed was established during the Ottoman period, was built at the end of the 1990s and thereafter.” They wrote that in “the area where al-Araqib is today, in 1945, no village or cemetery [ existed, whatever ]” Regavim, The Truth about the Bedouins in the Negev, December 2013.

Interview with Sheikh Salah al-Turi in the cemetery of al-Araqib, September 27, 2014.


For Forensic Architecture: Oren Ezer, Ariel Casse, Stefan Laxness, Christina Varvia, Nicola Ceye, and Omar Fawati.