

# Granular Realism Dominant and Counter-Dominant Practices of Spatial Photography in the Naqab

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## Editor's Note:

This contribution is a revised extract from the author's thesis: "Granular Realism / Ontology and Counter-Dominant Practices of Spatial Photography," Goldsmiths University of London, 2019.

The author was the project coordinator and researcher on the Forensic Architecture project Ground Truth.

## The Use of Drones and GIS to Monitor "Illegal" Construction

A slow but steady process of land transformation has been taking place over the last seventy years, gradually erasing traces of Palestinian Bedouin inhabitancy in al-‘Araqib and the larger Naqab region. The young tree saplings encircling the grounds of al-‘Araqib belong to the Mishmar Hanegev (the Negev Guard) forest, named after a nearby Jewish kibbutz. They are part of a series of afforestation projects established by the Jewish National Fund (JNF) and the Israeli Land Authority all along the northern edge of the Naqab desert. From Yatir forest in the east to Be’eri forest in the west, two conjoined lines of defense – one, supposedly aimed at battling desertification, the other, stretching from the Gaza Strip to the West Bank cease-fire line – are focused on disrupting expansion of a Palestinian presence that threatens to split Jewish-Israeli sovereignty over the land from north to south. What is unique about this strip of afforestation is not its ecological justification, part of a state “green-washing campaign,” or its desired effect, but rather that a significant reason for its establishment has been the goal of uprooting the indigenous Palestinian Bedouins and eroding all evidence of their heritage in the area. Through this inverted use of eco-friendly afforestation, the JNF and the Israeli state are irrevocably changing conditions on the ground, circumventing both juridical processes and public discourse.

The “Battle for the Negev” which began with Operation Yoav<sup>1</sup> in 1948 shifted in subsequent decades from direct armed



Figure 1. Al-Turi cemetery as seen through the community satellite point cloud, 2016 (left), and as seen on Google Earth, 2017 (right).

conflict into one waged by means of land cultivation, development, construction, and demographics. Keeping the balance on the side of the (Jewish) state meant there was a growing need for fast and efficient organizations for monitoring mechanisms. Aerial and satellite surveys was the most efficient method by which to keep up with the “illegal” construction, cultivation, and attempts at return by Palestinian Israelis in the Naqab/Negev.

Government ministers and right-wing NGOs contribute to the Judaification of the Naqab alongside academics, lawyers, politicians, and planners who simply advocate for an enactment of “the rule of law.” Visuality and erasure, imaging and planning, law and planning rights coalesce to form a nexus of reciprocal relations, a feedback loop that gravitates between the ideological and bureaucratic. This system has maintained a steady course since 1948: its aim is the Judaification of the contested lands and their so-called revitalization, alongside attempts at de-politicization<sup>2</sup> of the Palestinian Bedouin resistance and the de-legitimation of Bedouin and Palestinian struggle to reclaim their rights to their land in the face of Jewish ethnocracy.

If until recently the aim of survey-imaging was to compress geographical volume into its surface features, the past decade has seen the introduction of semantic, algorithm-aided, automatic feature recognition in the processes of remote sensing, and GIS work in both two- and three-dimensional space. Deploying these Machine Learning tools for remote sensing, aerial surveying and the production of surveillance datasets has significantly increased the ability of state authorities, as well as right wing NGOs such as Regavim (clods of earth, in Hebrew), a Zionist Israeli NGO established in 2006 to monitor and quantify any trace of new so-called illegal expansion of Bedouin settlements, and act to curtail them.

According to the English version of its website, Regavim is dedicated to the “responsible, legal, accountable and environmentally friendly use of Israel’s national lands and the return of the rule of law to all areas and aspects of the land and its preservation.”<sup>3</sup> This quote is phrased in such a way as to reflect an apparent professional and civic concern for the rule of law. However, in the Hebrew version of the webpage (as well as in other slightly deeper sections of the English site), the language changes to one of a straightforward ethno-national war of survival, which must be waged through cutting-edge remote sensing and surveillance, hand-in-hand with Jewish agriculture, afforestation, and settlement. In the Hebrew site, Regavim’s aim is to promote a “Jewish Zionist agenda . . . on aspects of land and environment . . . advocating the preservation of the State of Israel’s national natural resources for the entire Jewish people . . . taking care that no one will covet them to themselves contrary to the law and certainly not under the auspices of the law.” Those threatening and coveting Jewish national land, and striving for the elimination of the Jewish State, according to Regavim, are “hostile agents, aided by huge financial support from foreign countries in Europe and the Arab states and by the moral backing from post-Zionist organizations in Israel.”

Regavim is a unique example of the way in which right-wing settler ideologues have shifted their mode of operation. On the one hand, they are adopting the discourse of human rights and international law<sup>4</sup> in order to portray Israel’s actions against the Palestinian population as defensive, even within its the internationally recognized 1948 borders. Additionally, in parallel to increasing Palestinian and Bedouin solidarity between the West Bank, 1948 area, and Gaza, the NGO seeks to further blur any distinction between the Naqab and the West Bank and Gaza, in the hope for a greater Israel.

A present-day escalation of the “battle for the Negev” is being waged through an alliance between the state planning authorities and this new Zionist settler NGOs remote-sensing surveillance. Regavim operates through the parallel use of ground surveys, legal action, and advocacy. Emulating the work of leftist NGO’s such as Peace Now, B’tselem, Yesh Din, and Bimkom which deploy remote sensing across time to monitor illegal actions by the state while pursuing legal (and advocacy) routes in an attempt to hold the state to account on behalf of civil society and the unrepresented residents of the Occupied Territories, Regavim has adopted similar techniques against the Palestinian population in order to spur the state into action. Increasingly, GIS and satellite imagery analysis form an essential part of their reports and position papers.<sup>5</sup>

The village of al-‘Araqib has been the focus of several Regavim reports, all of which systematically attempt to counter the main claims set forth by the families of al-‘Araqib in the courts. Its latest report, released on 31 December 2018 titled “The Truth about the Bedouin in the Negev,”<sup>6</sup> focuses on the testimony of Ruth Kark, one of the state’s leading expert witnesses regarding Bedouin land rights trials. Kark attempts to counter Bedouin claims for indigeneity, the continuity of their presence predating Israel’s formation, and their historic, lived, and cultural connection to the land. Kark’s findings, backed by Regavim’s aerial image analysis, claims that the existence of

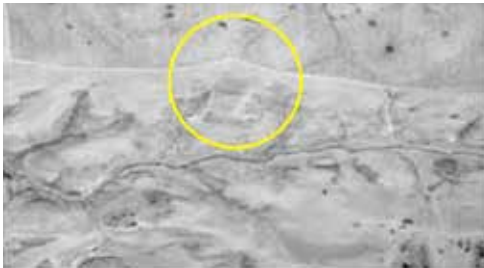
the village and cemetery of al-‘Araqib are false since evidence of the cemetery only appears in 1965, and the village itself only came into existence in the 1990s.



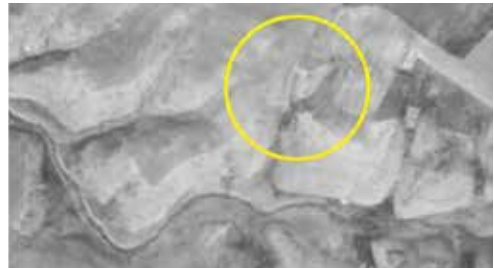
Al-‘Araqib 2010, a village and a cemetery.



Al-‘Araqib 1989, a cemetery but no village.



Al-‘Araqib 1965, indication of a new cemetery, no village.



Al-‘Araqib 1945, no cemetery and no village.

Figure 2. Aerial interpretation produced by Regavim attempting to disprove the claim of al-Turi family that al-‘Araqib existed as a village prior to 1965, online at ([regavim.org](http://regavim.org)) [tinyurl.com/r7snlrp](https://tinyurl.com/r7snlrp) (accessed 14 April 2020).

A simple examination of the images laid out in the report, however, reveals that they have been distorted and, more significantly, the yellow marking pointing to the area of the cemetery is placed in the wrong location in all but the 2010 image. Furthermore, as demonstrated by Eyal Weizman and Forensic Architecture,<sup>7</sup> the size of the al-Turi cemetery was still small in the 1940s and its graves were merely small mounds of earth.<sup>8</sup> As such, the level of detail on Regavim’s aerial photography is not sufficient to differentiate between land and grave; only by zooming into the level of the silver halide grain on the photographs, overlaid onto a map within GIS software, can we discern that, in the 1945, 1949, and 1956 images, traces of the cemetery are in fact present.

Where the state and its supporting expert opinions only see transient and occasional tents belonging to nomadic Bedouin tribes, we can clearly identify a sedentary, continuous agricultural village, tracing from nineteenth and early twentieth century land documents and testimonies, through pre-state aerial photographs and up to the current residents of al-‘Araqib. Prior to the founding of Israel and the Palestinian Bedouin displacements in 1951, Bedouin families did indeed inhabit the land in a sedentary fashion in a clustered formation of households, according to family association, with each household owning and cultivating its lands, and with a

supporting architecture of tents, stone and mud houses, wells, underground caves for grain storage, and cemeteries.

In late 2016, Regavim set up a drone unit in order to expand its ability to monitor land use and construction throughout Israel and the West Bank. The area laying between the Naqab region and the West Bank received particular attention in the unit's activity as it is perceived as the forefront of the "architectural war" being waged by the Palestinians and Palestinian Bedouins and is regarded as a fault line within Israel's own line of defense. Consequently, the NGO is using remote sensing to monitor the so-called rampant Bedouin take-over of lands in the Naqab/Negev.

The claims of landgrab, illegal construction, and trespassing brought against al-Turi, al-'Uqbi, and Abu Freih families of al-'Araqib rest on the a priori negation of their long-term presence and ownership of these lands. What is not (entirely) contested, however, is the fact that the families were there at some point during 1951 and 1953, when they were officially evicted by the Israeli military. Throughout the Naqab, Palestinian Bedouin villagers were forced to evacuate their lands and move into an enclosed region north of Beersheba, later termed the "*siyaj*" (fence). The families were given various reasons for this forced displacement, such as security needs, military training maneuvers, infrastructural development, and so on. In most cases they were encouraged to believe that this displacement was temporary and that they would return.



Figure 3. Aziz al-Turi points out the layout of al-'Araqib village in an aerial 2009 aerial photograph, prior to its destruction in 2010. Photo by author, 2017.

Two main legal claims form the basis of the current challenges against the state: the claim of the families' historic continuity of sedentary presence, ownership, and cultivation of the land; and a challenge to the legality and present validity of the 1951–54 forced displacements and land confiscations that took place. Both of these

legal processes put into motion by the Bedouin families require evidence that “anchors” them to land through spatial analysis and historic and present-day documentation. Any form of argumentation supporting their sedentary presence prior to the foundation of the Israeli state needs to link all existing forms of testimony and documentary evidence to both the physical as well as the image-based record.



Figure 4. Nearly every one of the Bedouin sites has a corresponding archaeological registry in the IAA survey. These registries, marked in the above images by orange rectangles, seen through the Israeli survey platform, date from the Byzantine to the Ottoman eras. But in nearly all of these cases, they fail to acknowledge the recent use by local Bedouin families over the past two centuries.

## Ground Truth: Towards A Participatory Spatial Counter-Practice

In “Ground Truth,”<sup>9</sup> a do-it-yourself participatory production of aerial imagery and photo-based 3D mapping has become a mode of activism that reframes our understanding of aerial photography and surveying. In this project, which I undertook as a project coordinator and researcher at Forensic Architecture,<sup>10</sup> I aimed to explore the ways that a new method of use for point cloud and Structure from Motion (SfM)<sup>11</sup> photogrammetry – when networked into the currently separate field of GIS<sup>12</sup> and created through a long-term participatory processes – can help redefine the possibilities for visual-spatial activism.

As discussed earlier, drones and low altitude aircraft were and still are used in this area by authorities to survey what is termed illegal construction, followed by demolitions. We therefore adopted the simplest form of aerial photography available. The unobtrusive, and more importantly, inclusive kite allowed us to conduct aerial photography with community members while our feet were firmly on the ground, walking the terrain with the kite camera above. Together

with the families of al-‘Araqib, Public-Lab<sup>13</sup> and the NGO Zochrot,<sup>14</sup> this large-scale, long-term project has created a method whereby photogrammetry is used to assemble the aerial, ground, and underground<sup>15</sup> views captured across multiple periods of time by “community satellites”<sup>16</sup> into spatial point-cloud constellations. A custom-built, online, 3D geographic information platform, Naqab.org, enables the interconnection of these geo-located environments with archival data and media sources and situated testimony.



Figure 5. The Bayka (stone house) and storage cave of Ibn Bari, al-‘Araqib: point-cloud composite with camera locations. Photo by author, Forensic Architecture, 2017.

The surface of contestation in this case is one on which many different layers of land-use, dispossession, and violence are inscribed. Here, too, land struggle itself is multiple and collective in nature, involving communities, NGOs, activists, journalists, and lawyers. As such, I would argue, following Eyal Weizman, that the ground needs to be read as a photographic surface of inscription – not only through remote knowledge of the state or a revised reading of the archival aerial photograph, but also and primarily through the lived knowledge and history of the families as it materializes through the communal production of the 3D, spatial-image in a process of collective witnessing and survey. Drawing on the inherent multi-viewpoint qualities of the emergent medium, we link multiple forms of knowledge – legal, lived knowledge of the families, land documents, survey data, and imaging – by means of a durational and collective process. While the earth operates as a palimpsest that registers the recurring acts of violence, the spatial-image enables us to measure, compare, track, and testify to the nature and extent of those violations.

The families’ connection to the al-‘Araqib is intricately linked to a long, embedded, lived experience of being on the land. In this sense, the rapid afforestation and displacement is not only erasing their past and present existence and heritage

but also radically undermining their very ability to orient themselves in their ancestral land or recognize its landmarks. However, using the Ground Truth project as an exemplar, I would argue that to overcome or mitigate this repeated erasure – the overwriting of the land, its surface features but also its three-dimensional spatial (volumetric) relations, such as the underground depth of a well or cave, the inclination of a hill directing waterflow and runoff water to a cistern or the position of a tent or house in relation to the hilltop and the resultant exposure to winds – we need a photographic practice that is diffused, collaborative, multiple, and architectural. The spatial photograph (the 3D point cloud) forms a volumetric palimpsest where space, image, navigation, and testimony are collapsed into one computational optical environment, allowing us, through its three-dimensional and networked materiality and collective modes of practices to challenge pre-existing thresholds of visibility and of civic participation, and to intervene in the current conditions for the production of truth under conditions of visual and political violence.

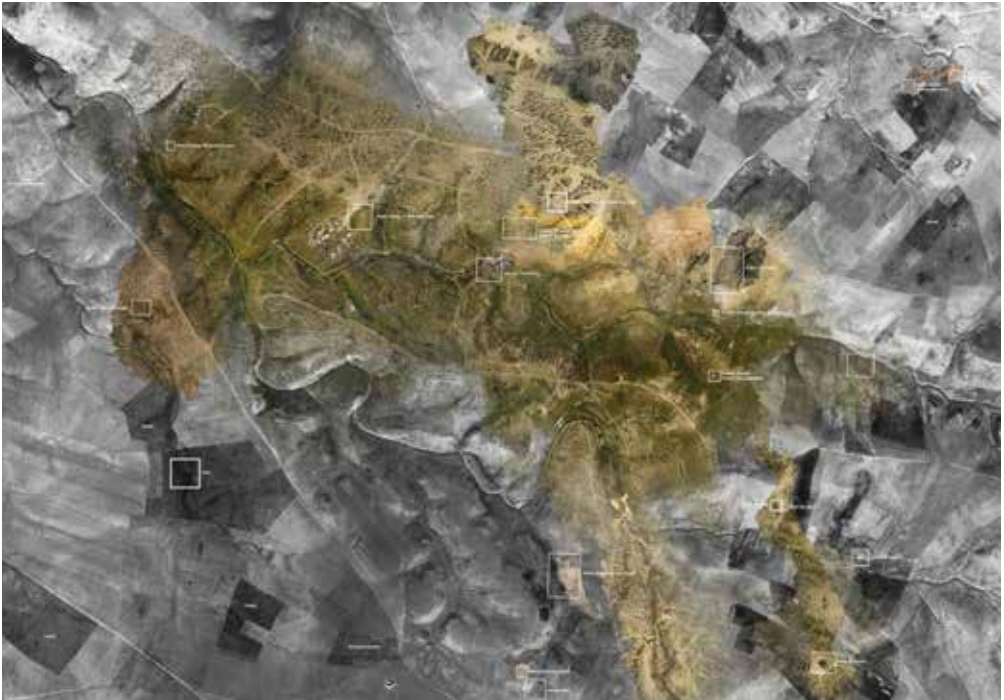


Figure 6. Al-'Araqib 1945/2017 – a composite of Royal Air Force aerial photograph and community satellite point clouds. Photo by Forensic Architecture, Ariel Caine, Aziz al-Turi, Nuri al-'Uqbi, Debby Ferber (Zochrot), and Hagit Keysar (PublicLab), 2017.

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## Endnotes

- 1 “Operation Yoav,” Wikipedia, 26 February 2019, online at ([wikipedia.org](http://wikipedia.org)) [tinyurl.com/tacr5lm](https://tinyurl.com/tacr5lm) (accessed 5 March 2020).
- 2 Ahmad Amara, Ismael Abu-Saad, and Oren Yiftachel, eds., *Indigenous (in)Justice: Human Rights Law and Bedouin Arabs in the Naqab/Negev* (Cambridge, MA: Human Rights Program at Harvard Law School, 2012).
- 3 See official website, online at [www.regavim.org/our-vision/](http://www.regavim.org/our-vision/) (accessed 5 March 2020).
- 4 Nicola Perugini and Neve Gordon, *The Human Right to Dominate* (New York: Oxford University Press, 2015).
- 5 Regavim (blog), “Maps & Position Papers Archives,” online at [www.regavim.org/category/position-papers-maps/](http://www.regavim.org/category/position-papers-maps/) (accessed 5 March 2020). For example, in “The Truth about the Bedouin in the Negev,” see the use of aerial photos of Bedouin areas, online at ([regavim.org](http://regavim.org)) [tinyurl.com/vhx8yod](https://tinyurl.com/vhx8yod) (accessed 5 March 2020).
- 6 “The Truth about the Bedouin.”
- 7 Eyal Weizman and Fazal Sheikh, *The Conflict Shoreline: Colonization as Climate Change in the Negev Desert* (Göttingen: Steidl, 2015).
- 8 In September 2019 we submitted an expert witness testimony to the Israeli court on behalf of the families of al-‘Araqib, providing aerial interpretation of images from 1945–99 demonstrating the continuity of sedentary presence of the families in the claimed area of al-‘Araqib.
- 9 “Destruction and Return in al-‘Araqib,” online at [forensic-architecture.org/investigation/destruction-and-return-in-al-araqib](http://forensic-architecture.org/investigation/destruction-and-return-in-al-araqib) (accessed 6 March 2020).
- 10 Forensic Architecture is an interdisciplinary, independent research agency based at Goldsmiths, University of London. I have been a member and project coordinator in the agency since mid-2016. See online at [www.forensic-architecture.org](http://www.forensic-architecture.org) (accessed 6 March 2020).
- 11 Structure from Motion (SfM) is a field within photogrammetry in which the process of spatial 3D reconstruction uses multiple planar images taken from varying positions in space. 3D form is gained through the motion of the camera through space by which it records different angles of a single scene.
- 12 GIS (geographic information system) is a framework for gathering, managing, and analyzing data as part of a system of cartography.
- 13 Public Lab is a community and a non-profit, democratizing science to address environmental issues that affect people. It was originally founded in the United States in the wake of the 2010 BP oil disaster. See the website, online at [publiclab.org/about](http://publiclab.org/about) (accessed 9 March 2020).
- 14 Zochrot (remembering, in Hebrew) is an Israeli NGO working since 2002 “to promote acknowledgement and accountability for the ongoing injustices of the Nakba, the Palestinian catastrophe of 1948, and the reconceptualization of the Return as the imperative redress of the Nakba and a chance for a better life for all the country’s inhabitants.” See the Zochrot website, [zochrot.org](http://zochrot.org) (accessed 9 March 2020).
- 15 Cameras were lowered into caves, cisterns, and wells in order to document their structure before they are filled in by the Jewish National Fund afforestation works.
- 16 A term adopted from Public Lab. See “Our History” section, online at [publiclab.org/about](http://publiclab.org/about) (accessed 9 March 2020).