

of the lesson discussion forums, though, appeared to have less dialog than others, depending on the extent participants wanted to respond to each other's posts. These few shortcomings of the MOOC were minor in relation to the cartographic and ArcGIS Pro experience that it offered.

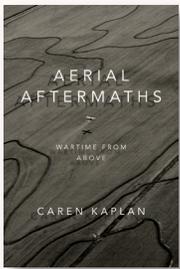
Overall, I found that the experience of participating in this MOOC was positive and informative, as it enabled me to explore ArcGIS Pro's cartographic functionality in a sequenced environment alongside others, during a specified time. The time allowed to complete the exercises and weekly sections was manageable. I would recommend taking this MOOC to anyone who wanted an introduction to cartography, and those who are interested in ArcGIS Pro. Many of the items presented in the Cartography MOOC could be applied to cartographic design projects, and would help the mapmaker create more unique works. This MOOC could also serve as an introduction to other

Esri training courses and MOOC offerings, as these focus on related topics, such as ArcGIS Online, imagery, and other Esri products. Participation in a MOOC or other self-paced online tutorial is an option for professional development and lifelong learning that GIS users may want to consider in the never-ending task of keeping up-to-date with changes in software technology. A wide range of learning opportunities, including tutorials, webinars, and more MOOC offerings, are available from the Esri training site (esri.com/training), which can help to further one's experience with cartography and ArcGIS Pro.

REFERENCE

Balchin, W. G. V., and Alice M. Coleman. 1966. "Graphicacy Should be the Fourth Ace in the Pack." *Cartographica* 3 (1): 23–28. doi: [10.3138/C7Q0-MM01-6161-7315](https://doi.org/10.3138/C7Q0-MM01-6161-7315).

AERIAL AFTERMATHS: WARTIME FROM ABOVE



By Caren Kaplan

Duke University Press, 2018

312 pages, 58 illustrations, \$27.95, paperback.

ISBN: 978-0-8223-7017-8

Review by: Jonathan Lewis, Benedictine University

Aerial Aftermaths: Wartime From Above examines not only the initial appearance and subsequent evolution of aerial observation, but also the assumptions underlying the creation and interpretation of those views. The author, Caren Kaplan, connects the emergence and development of the aerial view with warfare, and with facilitating the efforts of major colonial powers to control and extract resources from spaces while ignoring their prior uses and depictions. The book begins with a protracted analysis of images from the 9/11 attack on the World Trade Center, taken by individuals and groups of varying official designations. These include photos obtained at ground level by first responders, others taken by New York City's Police Aviation Unit from a short distance above the burning buildings, and still others acquired by satellites and from the International Space Station. This association of aerial views with the state sets

up Kaplan's subsequent chapters on the appearance and development of the detached, bird's-eye perspective and its connections with state power.

Throughout the book, Kaplan employs the term "aftermath" to describe the consequences of wartime aerial perspectives. Though originally meaning the second mowing or harvest after an initial cutting, Kaplan laments that it has acquired "a figurative [meaning] as 'something' that 'results or follows' from an event that is 'disastrous' or 'unfortunate,' especially in relation to war" (18). While this suggests that her book will pit power against resistance, Kaplan takes pains to ensure the reader that she is after something quite different:

This book argues that the history of aerial views—whether observed from towers or mountains or hot air balloons or planes, whether incorporated into cartographic surveys or panoramic paintings—troubles this conventional divide between power and resistance in the storyline of visual culture in modernity. I would suggest that we move beyond de Certeau's evocative opposition between "seen and seeing objects" to consider the possible presence of the unseen and unsensed (2–3).

Over the next few chapters, Kaplan describes some of the key elements contributing to, and illustrating, her argument. In the first of these chapters, she explores the motives and means behind the First Military Survey of Scotland (established in 1747) as a way to illustrate “the formation of geographical knowledge as a quantifiable science” (34).

Military leaders were at the forefront of those arguing for a clear overhead perspective to help suppress recurring rebellions and deter possible invasions from the north. It was their conviction that unknown and unmapped territory was conducive to, and indeed created, insurrection: that is, disorder. Visual representation, therefore, introduced order and stability to areas where the local population had seen its villages burned, prisons built, and opposition leaders executed. The mapping of the Highlands in particular was seen as essential because it was “the incubator of rebellion and disorder through nature, as a terrain given innately to treason and therefore requiring domestication and control” (40).

The Military Survey “became Britain’s prime ‘laboratory’ for the kinds of innovations in surveying and mapping that would become standard operating procedure in the colonization of North America, South Asia, and elsewhere in the years to come” (48). A key player helping accomplish this was Paul Sandby, a young draftsman and landscape painter turned cartographer. Through his efforts, and those of others involved in the Military Survey, Scotland’s mountains became tamed, and were transitioned from “wastelands’ as subjects of science and management [into] resources to be tapped and mined as well as reshaped” (62).

Often, the maps initially produced by Sandby and others were considered too “artistic” and so were “made less ‘painterly,’” and “‘more reliable’ if less ‘attractive’” (65) by the Board of Ordnance. This meant that the ultimate visual representation passed through many hands, often those of individuals located a great distance from the region and who had never visited the area. This was an important early step in the transition of imagined aerial views produced during the early Renaissance to perspectives that, while equally imagined, were informed by the careful and methodical measurements of surveying.

Kaplan’s second chapter, “Balloon Geography: The Emotion of Motion in Aerostatic Wartime,” describes the earliest aerial views described and made by individuals

carried by balloon, often to literally dizzying heights. She points out that while aerial views existed prior to actual flight, they represented the *expected* view from above.

Those expectations, however, were grounded in conventional depictions of atmospheric perspective as observed from the relatively low elevations of hills or towers. Where painterly depictions showed distant objects as softened and less distinct than those in the foreground, actual aeronauts saw things clearly and sharply, and in vivid color, regardless of distance.

Kaplan points out that efforts were made to bring together and resolve the varied accounts given by aeronauts in order to produce consensus on one unaltered perspective capable of withstanding challenge from the introduction of new information.

In this moment of contradictory and multiple practices, Enlightenment social and natural sciences strove to bring together the widest possible examples of observable phenomena, and to organize these vast collections in increasingly rational formats. . . . But these most modern of scientists for their age . . . could not fully accommodate their experiences within available science . . . their senses were challenged by new information and evidence (95).

With such confusion over what was seen, military leaders could not hope to acquire, in a single glance, the clear and complete view from above that Kaplan calls *coup d’oeil*. Thus, despite some early, and notably successful, efforts to utilize balloon reconnaissance, the new technology soon lost support.

“La Nature à Coup d’Oeil: ‘Seeing All’ in Early Panoramas” is Kaplan’s third chapter, and it covers the creation of panoramic displays, especially those done in the late eighteenth century by Robert Barker. Kaplan explains the allure that panoramas offered, before moving to the central concern of her book: military themes in aerial images, and how they obscure at least as much as they reveal in the process of drawing attention to matters of importance in battles and in the aftermath of combat.

In the period during which Robert and Henry Aston Barker produced panoramas, Britain embarked on twenty-five years of almost

continuous war with France. During the same period, the French Revolution proceeded violently, alarming British conservatives, and generating repressive tactics to ensure public order (132).

The popularity of contemporary military scenes, then, comes as no surprise. Panoramic images such as *View of the Fleet at Spithead* (1793), *Lord Nelson's Defeat of the French at the Nile* (1799), and *The Battle of Waterloo* (1815), among others, immersed viewers in wartime settings. Accompanying pamphlets pointed out important elements and their proper interpretation. They offered a narrative that steered and shaped what viewers saw, and allowed them “to feel connected first-hand to the news and events of the day” (135), including the ability to safely witness battles in visually striking recreations. In her chapter summary, Kaplan points out that panoramas “offered British metropolitans the opportunity to sense more openly the battles that they paid for quite dearly in both blood and money . . . [and] produced a particular kind of wartime visual culture in the context of art and entertainment” (136).

Aerial photography is the theme of Kaplan's fourth chapter, in which she emphasizes the role played in its development by Western political and military interventions in the Middle East. Although it was important in Europe during the First World War, “aerial photography in warfare was first introduced in Libya, three years before the official start of World War I, as Italian forces attacked Ottoman Turkish installations” (140). This region was especially conducive to airborne observation, due to its fine weather, flat terrain, and lack of obstructions that obscured views of the surface.

In this period, concern with the emotional responses or aesthetic observations of early aeronauts faded away as aerial photography became increasingly associated with technical or military objectives, an association that led Charles Waldheim (1999, 147) to “recognize the complicity of the aerial photograph with the map as instruments of surveillance and control.”

Kaplan supplements her arguments with examples of both early aerial photography and the rubrics used by the photo interpreters to facilitate generation of military maps. By the end of the chapter, Kaplan has exposed the transitioning

rationale for aerial photography from its starting point as a simple tool for reconnaissance all the way into an active, weaponized instrument for killing scores of civilians.

Advocates of airpower in Europe and the United States argued that it was more moral to plan for massive bombing raids on cities because the scale of violence would force an early surrender . . . since this kind of firepower had not yet been unleashed on European or American metropolises . . . there was no “moral or legal taboo” to prevent the bombing of large-civilian populations in colonized or Mandate zones (175).

The heavy casualties inflicted by aerial attacks, however, increased rather than eliminated local resistance, and necessitated—from the perspective of the British Royal Air Force—additional reconnaissance and bombing. This, in turn, produced “a population bombed into subdued if restive compliance” (178).

In the next chapter, “The Politics of the Sensible: Aerial Photography's Wartime Aftermaths,” Kaplan describes the work of three late-twentieth-century artists who utilized aerial photography in order to draw attention to the effects of overwhelming assaults in a period when aerial imagery provided “news” that sanitized the realities of the wholesale destruction of civilian populations.

Photographs in Sophie Ristelhueber's exhibition *Fait* (Grenoble, 1992) showed the scarred land and abandoned equipment left behind after the 1990–1991 Gulf War. Reviews of Ristelhueber's exhibit invoked comparisons with the painted panoramas Kaplan had described earlier: “To see the images in person is to view them in an intentionally created aura, an almost panoramic immersion. . . . Mayer [(2008)] links the exhibition experience of *Fait* to a panorama that overwhelms the senses of the viewer” (193).

The artist Jananne Al-Ani took aerial images of farming areas in Jordan, in which one can discern “traces of past events and inhabitants, liminal presences that can be sensed from various angles and in different lights” (195). Her aerial archaeology “provides evidence that the past is recoverable . . . if the right conditions, subjects and technologies are brought together” (198).

That potential for recovery is the motivation behind the third artistic challenge to military-industrial aerial photography that Kaplan discusses: that of the team of Fazal Sheikh and Eyal Weizman. Their work extends the perspective employed by Al-Ani into “a five-year photographic project in Israel and the West Bank,” with particular emphasis on “the northern Negev Desert, which has been emptied of Bedouin inhabitants by the Israeli government and which is now slated for significant development” (200). Sheikh and Weizman intended their work to help supply the “documentation to support indigenous land claims [that] is either lacking or exists in formats that are not recognized by the Israeli legal system” (200).

In a situation similar to that experienced by indigenous Americans, “the politics at work in this ‘systematic state campaign’ . . . seeks to remove [an] entire inconvenient population from the ‘fertile northern threshold of the desert’ and relocate them to areas far more arid” (201). In the work of these artists, aerial imagery is used, not to advance the removal or control of “inconvenient populations,” but to thwart, and perhaps reverse, the self-serving plans of powerful outside interests.

In her “Afterword,” Kaplan explains how aerial photography and reconnaissance has undergone yet another expansion and revision with the introduction of drones. In some areas, monitoring by drones is now continuous so that “on any given day as we go about our daily lives in the United States, many drones are in operation over foreign terrain, conducting surveillance and launching attacks” (209).

Information obtained from drones, satellites, and other sources provides data for the latest set of computer algorithms to analyze. These systems are turning “away from the two-dimensional cartographies that control contiguous blocks of horizontal space and toward the conceptualization of vertical volumes of area that require entirely different modes of remote sensing” (212). This, in turn, means that “strategic doctrines and tactics of airpower would have to adjust to this three-dimensional battle space that would now include tunnels, bunkers, sewer systems, and buried infrastructures as well as street and house to house combat” (213).

Kaplan closes her book by clearly stating her concerns about these developments.

The United States wages war in such a way that most people at home do not have to think about geopolitics or casualty figures at all while those professionals who do the killing remain safe and sound (211).

Living in the United States during a long war that seems to figure in the public life of the nation only as patriotic sloganeering or security state fear-mongering, . . . [my] country kills people directly, and indirectly, from close proximity as well as from afar . . . [my] job is not to impersonate the universal view from “no where” or to succumb to numb defeatism [but to] become sensible to other possibilities (216).

Aerial Aftermaths is a work that brings together serious and complex ideas from different disciplines. Readers most familiar with one area of study may find the approaches and conclusions from others a little confusing. Those most acquainted with what might be termed a traditional “history of cartography” approach, for example, will be glad to see Denis Cosgrove’s name appear. Others, who pick up the book because of its coverage of Middle East history and conflict, will similarly be pleased to see Robert Fisk’s name included in the bibliography. But most of the viewpoints summarized in Kaplan’s argument come from the study of visual culture. Her success in excerpting pertinent observations from writers in a wide variety of intellectual disciplines, including alternative and emerging ones, is one of her book’s major accomplishments. Another strength is her utilization of recent interest in late eighteenth and early nineteenth-century panoramas to place those works in the context of the emerging contemporary conceptualization of the Earth’s surface from the air. By distinguishing between affective and objective responses to what was seen from the sky, she effectively demonstrates how existing understandings and expectations were profoundly challenged by the actual experience of seeing the ground from aloft.

One area where *Aerial Aftermaths: Wartime From Above* could be stronger involves its treatment of negative evidence. Although Kaplan often acknowledges events or evidence that are significant for their absence, she occasionally inserts speculative explanations for these absences, an approach that discards falsifiability. For example, Kaplan describes a particular Paul Sandby painting of a Scottish

landscape, in which she says that the artist/cartographer had ignored a prominent mountain that he could hardly have overlooked. Committed, as she is, to characterizing the Military Survey as part of an imperial effort at pacifying the local population, Kaplan characterizes the scene as lauding the disciplined work of the surveyors depicted in the painting. Her explanation of why Sandby chose to ignore the much larger mountain directly behind him is that its size would symbolize the folly of any effort to impose order on such an enormous feature. Yet, had Sandby chosen to paint the mountain in question, then one supposes that Kaplan's explanation would have shifted to instead assert that the painter's objective was to show the power science could use to bring such enormity under its dominion. This is a logic that defies challenge, because there are no conditions under which an image (or its absence) cannot be interpreted to support the preferred narrative.

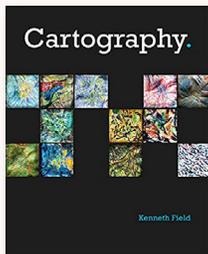
In conclusion, Caren Kaplan's *Aerial Aftermaths* utilizes insights from different disciplines to inform an account of the appearance and transformation of images drawn from

aerial observations over a span of several hundred years. While early chapters make it clear that military interest in aerial views was tenuous during the early days of aerial observation, that interest increased dramatically alongside advances in flight. The book's conclusions demonstrate the necessity of understanding both the raw destructive capabilities of current technologies, and how visual representations of that destruction inform and infiltrate the work of contemporary artists. Throughout, Kaplan exhibits a solid grasp of a broad literature from different disciplines and an abiding concern for the urgency of her subject.

REFERENCES

- Mayer, Marc. 2008. "Fait." In *Fait*, by Sophie Ristelhueber, preface. New York: Errata Editions.
- Waldheim, Charles. 1999. "Aerial Representation and the Recovery of Landscape." In *Recovering Landscape: Essays in Contemporary Landscape Architecture*, edited by James Corner, 121–139. New York: Princeton Architectural Press.

CARTOGRAPHY.



By Kenneth Field

Esri Press, 2018

576 pages, \$95 paperback, \$130 hardcover.

ISBN: 978-1-58948-439-9 (paperback);
978-1-58948-502-0 (hardcover)

Review by: Mark Denil, *sui generis*

Cartography. (pronounced "Cartography, Period" or "Cartography, Full-Stop"), is the long-awaited and much-anticipated "compendium of design thinking for mapmakers" (*title epigraph*) from Kenneth Field, the indefatigable Senior Cartographic Product Engineer at Esri.

Cartography. has no subtitle—nor should it need one, really—the single word covers it all. That title, however, includes a punctuation mark; and this little dot—in blue on the book's cover—is every inch a gauntlet thrown on the

ground. Including, and emphasizing, this bold little dot in the book's title is a brash and confident gesture that constitutes a challenge to all comers. This book, before it is even opened, has declared itself to be complete: it announces that *Cartography* is here, between these covers, and that what is beyond these covers is Not *Cartography*. Does that interpretation sound overblown? This aspect of challenge is clearly understood by the publisher: in the July 2018 edition of *ArcWatch*, Carla Wheeler wrote that "everything you need to know about how to create well-designed maps can be found in the beautifully illustrated pages of *Cartography.*" (Wheeler 2018). She also quotes the author:

"This book is boldly intended as a one-stop shop for cartography. It's the book for aspiring mapmakers that can act as a guide and a grounding in the ideas that support better mapping," Field said. "It's also the handy reference for those [mapmakers who are] more experienced."

(Wheeler 2018; *interpolated text in the original*)