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Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood

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The ongoing Syrian civil war raises new cartographic challenges, including the ethical question of how the self-proclaimed Islamic State should be represented. Based on a comparative study, this article investigates the visual languages of IS sanctuary maps as published by news agencies, intelligence agencies, or circulated by the insurgents themselves. I argue that the statehood of territory held by the IS is symbolically contested through cartographic choices that reflect the diverging interests of the map makers. Beyond official representations, the article also considers the maps created by amateur conflict mappers and visual forensics experts, who extract and cross-reference information from social media including posted cell phone and drone footage, georeferenced tweets, and satellite images. I argue that the novel visual strategies developed by these practitioners for presenting visual evidence emphasize nonrepresentational aspects of cartography and represent a countermodel to established cartographic languages that follows an indexical rather than iconic or symbolic paradigm. **Key Words:** cartography, Islamic State, visual forensics, visual rhetorics.

I saw a map of the self-proclaimed Islamic State (IS) for the first time in a documentary based on material from the reporter Medyan Dairieh, who spent three weeks embedded in IS territory (Dairieh 2014). Among the grim pictures in the documentary, the impression of this particular map was perhaps the most disturbing one for me. It was as if it depicted a concrete place and shape representing all of the atrocities committed by this group.

Much of this impression is due to the fact that the map looks so different from the visual language traditionally associated with political maps (Figure 1). Where one expects a coherent shape surrounded by a more or less convex border, the IS territory is represented as a sprawling network of nodes, connections, holes, and islands. As such, the “state” appeared like a parasitic organism, rendered in a dark red color, with appendages that reach far into its host states of Iraq and Syria. Former U.S. President Barack Obama, who presumably had seen many maps of the IS at that point, described the IS as a “cancer” that has to be “extracted” through a common effort (Obama 2014). This metaphor seems to resonate with the iconology of the map.

The map provokes a number of questions. First, does the depicted shape indicate that the IS pursues a new, postnational concept of statehood—a state that defines its own territory as dynamic, sprawling across existing states, constantly in motion? This naive question, however, does not consider that the map is the product of a Western news organization and a U.S. intelligence agency and is, therefore, underpinned by a particular worldview. The impression left by the map is that the mental image of the state is a result of cartographic choices. The question then becomes how

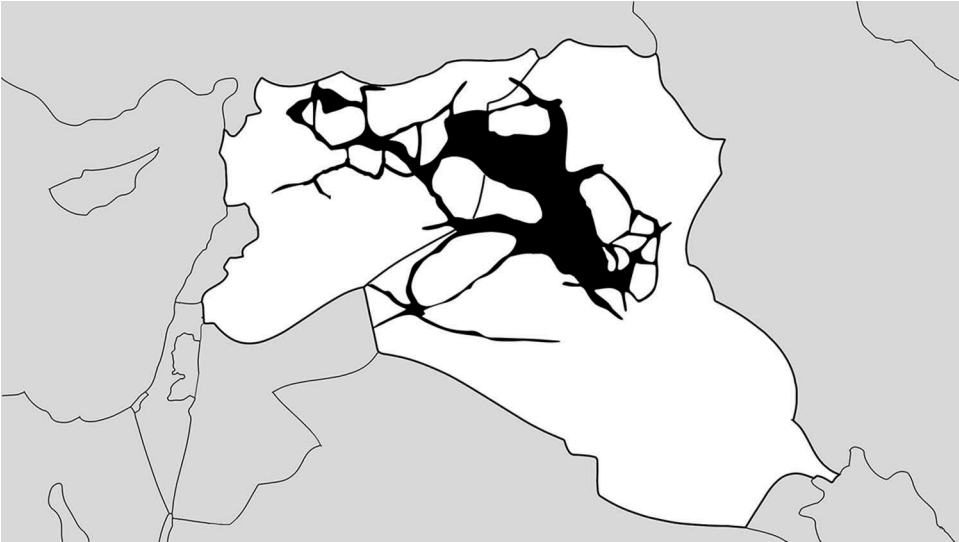


FIGURE 1 Map in the Vice News documentary *The Islamic State*; schematic based on Dairieh (2014).

different map makers and their interests and ideologies correspond with the visual languages used to depict the territory of the IS. Although maps of the IS have many authors with different worldviews and interests, the data these maps rely on are evidently much harder to come by. Although the spatial intelligence of military conflicts has always been subject to considerable uncertainty, the sources and methods of data collection have changed over time. If the Gulf War of 1991 was the debut of electronic media warfare, social media has characterized the current conflict in the Middle East. Tweets, smartphone videos, and drone footage provide a flood of information that is explicit yet deceptive. Fitting under the rubric described by Baudrillard (2006) as “war porn,” raw footage from the battleground comes mixed with propaganda videos full of pop culture references, including computer games and Internet memes (Lesaca 2015). Military operations from all conflict parties are partly driven by their anticipated media impact. In this context, a diverse group of amateur visual forensics experts has emerged. They extract spatial information from various social media channels, verify it by cross-referencing different sources, and create detailed maps that represent the conflict at the current moment. The last question then becomes this: How do conflict mappers construct spatial knowledge about the conflict, and how do these practices relate to the visual artifacts they produce?

ORGANIZATION OF THIS ARTICLE

This article is divided into three parts. The first section investigates the emergence of what I term the *rhizomatic state map*—a representation found predominantly in Western media that depicts the territory of the IS as being in an unstable, fluid, and ambiguous condition. Its range of visual

languages stands in contrast to traditional cartographic representations of nation-states. Drawing from a sample of more than 180 maps of the IS collected from online sources between 2014 and 2017, this section examines how cartographic representations have changed during that time with respect to the affiliations of their respective map makers.

The second part takes a closer look at the visual language and the rhetoric of the rhizomatic state map using the ISIS sanctuary maps published by the American Institute for the Study of War as an example. This section examines the use of cartographic symbols in the historical context of geopolitical maps and reflects their rhetorical functions through the lenses of cartographic communications theory and critical cartography.

The third part proceeds from issues of representation to the underlying practices of data collection and map making. This part contrasts the visual language of the ISIS sanctuary map with the visual artifacts created by a community of crowd-sourced conflict mappers and amateur visual forensics experts. It argues that the distinct visual languages developed by these practitioners reflect a shift from a concern for the legibility of data to the legibility of data sources. Focusing on the nonrepresentational aspects of cartography, their goal is the accountable presentation of evidence.

HISTORY AND GEOGRAPHY OF THE IS

The Islamic State, as proclaimed by its leader Abu Bakr al-Baghdadi on 1 July 2014, is the latest incarnation of the insurgency that started as the Islamic State in Iraq (ISI) in 2006, after splitting off from al-Qaeda. In 2011, ISI started coordinating operations with insurgents of Al Nusra in Syria, and in April 2013, the two groups united under the new name Islamic State of Iraq and al-Sham (ISIS). On 29 June 2014, ISIS announced the establishment of a caliphate, rebranding itself as the Islamic State (IS) two days later (BBC News 2014). Fearing that progressing IS forces would overrun Baghdad, the United Nations (UN) evacuated its staff members in October 2014. The group had different plans, however. Consolidating its territory, the insurgents instead turned back toward the Syrian border, opening new corridors and strengthening its network (Atwan 2015, 127).

To stay consistent with map sources, I use the terms ISI, ISIS, or IS, corresponding to the name the insurgents used at the time discussed. Many avoid, however, implicitly acknowledging the IS' claim to statehood by using the designation of an IS. Daesh, a neologism based on the abbreviated Arabic transliteration of "Islamic State in Iraq and Syria," is preferred by some Arabic speakers for this reason, and because it sounds similar to the Arabic word for "something that crushes and tramples" (Guthrie 2015). Nevertheless, the claim to statehood is not entirely unfounded. IS controls significant territory, has established an organized bureaucracy, and issues its own currency (Atwan 2015, 11). As Jürgen Todenhöfer, who stayed in the Islamic State in Iraq and Syria, assessed in early 2015, "We have to understand that ISIS is a country now" (Goodwin 2015).

The IS territory¹ is constantly shifting in the struggle between the multiple conflicting parties in the Syrian civil war, but some features defining the IS have persisted: The densely populated areas following the Euphrates and Tigris Rivers in Syria and Iraq, the ethnic and religious boundaries to the territories of Kurd and Shiite populations, and important transportation routes explain the mesh-like structure. Population density, however, is rarely represented in political

maps. Its inclusion visually diminishes the territory held by the IS and avoids all visual resemblance with a traditional state map, which was noted by a number of commentators.

THE RHIZOMATIC STATE MAP

“Look at the maps, not Facebook or Twitter,” Spanish economist David de Ugarte wrote on his blog in September 2014. He observed that news media prefer representations that depict the Islamic State of Iraq and the Levant (ISIL) as a traditional nation-state when, in fact, its territory appears to be highly fractured and fluid. He characterized ISIL’s concept of statehood as one of constant movement, following the logic of networked and emergent self-organization: “a floating, agile, exhausting, and resilient power” in which the control over transportation routes is everything and “territory is of no interest” (de Ugarte 2014).

De Ugarte’s account of the unstable, fluid, and network-like condition of the insurgent’s state evokes the concept of the rhizome introduced by philosophers Deleuze and Guattari (1988). Indeed, the IS territory depicted in Figure 1 resembles an actual rhizome, a sprawling subterranean network developed by several types of plants. When cut into pieces, each part of the rhizome can form a new plant. Deleuze and Guattari used the image of the rhizome to describe a relational and nonhierarchical mode of organization that allows for a multiplicity of perspectives, codes, and references. In contrast to the model of the genealogical tree, striving for logical consistency, clean categories, and dichotomies, the rhizome resembles a map, a hybrid assemblage with no prescribed way of reading. The authors make frequent references to cartography, using the term *map* in the broadest possible sense, not limited to spatial relationships and subject to constant change: “The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation” (Deleuze and Guattari 1988, 13). Describing a permanently intermediate space, the rhizome is a popular metaphor of the social and informational worlds of the Internet, which is supposedly also able to transcend geographic distance and boundaries.

Deleuze and Guattari (1988, 387) compared the hierarchical structure of the state with the shape-shifting force of the “war-machine”² consisting of decentralized, autonomous parts. The two modes are not binary categories (the authors reject those on principle), and the IS seems to combine both, harnessing the power of decentralized networks to strengthen its territorial ambitions. This is not the first time that the concept of the rhizome has been discussed in the context of a military conflict. Froehling (1997) described the New Year uprising of 1994 led by the Zapatista Army of National Liberation in the remote region of Chiapas, Mexico, as one of the first insurgencies that took advantage of the rhizomatic space of the Internet. With the help of a network of international supporters and the charismatic online persona of “Subcomandante Marcos,” a local conflict in an isolated rural area gained global attention. In his analysis of the conflict, Froehling (1997) argued that the Internet was of little relevance in the actual military conflict, but it helped to amplify the fight’s visibility and thereby disrupt and neutralize the communication strategies of the Mexican government. Twenty years later, journalist Abdel Bari Atwan (2015) attested that without its mastery of social networking platforms for dissemination, recruitment, and coordination, the IS could not have achieved its territorial ambitions.

Beyond the realm of networking, the rhizomatic shape of the IS also reflects the changing nature of urban warfare, which no longer has clean frontlines that can be easily followed. Under the traditional command and control paradigm, military operations require a global spatiotemporal understanding of all aspects that concern the contested territory, from tactical and strategic planning to logistics and communication. Insurgents engaged in urban warfare do not have the capacities to maintain such an infrastructure. Defense researcher Flaherty (2010) described the *rhizome manoeuvre* as an alternative tactic that treats physical space as completely fluid, echoing Bruce Lee's famous advice to martial artists to be "shapeless, formless, like water." It seeks to surprise the enemy by converging from multiple directions, sometimes moving through walls and ceilings by means of raw force. According to Flaherty, the complexities of such networked warfare are incompatible with the traditional command and control model of centralized information management and require a command and influence approach of decentralized decision making driven by a unifying, powerful ideology (Flaherty 2010).

Assuming that the rhizomatic shape of the IS territory reflects the insurgents' struggle to maintain control of vast areas of land without the support of traditional state and military infrastructure, does it also reflect the IS concept of statehood? The pluralistic nature of the rhizome appears in stark contrast to IS's strict ideology, even when taking into account Deleuze and Guattari's (1988) speculation that rhizomes might have their "own, even more rigid, despotism and hierarchy" (22). De Ugarte's speculation that "territory is of no interest" to the insurgents is contradicted by the maps published by the IS and its supporters, which appear utterly conventional (Figure 2). A map circulated by IS in early 2014 depicts the "caliphate" in traditional cartographic language as a unified state covering large parts of Syria and Iraq, divided into sixteen administrative provinces. An earlier map created in 2013 by IS supporters shows a global empire, including large parts of Africa, central Asia, and southern Europe. Rather than an extrapolation of its actual military influence, it is an allusion to historical power using the visual language of nineteenth-century colonial empires.

THE EMERGENCE OF THE RHIZOMATIC STATE MAP

The impression that news organizations initially preferred the traditional style of nation maps does not withstand scrutiny. A review of maps published in newspapers, on Web sites, and on TV programs reveals a diversity of visual languages, shapes, and symbologies. IS maps that resemble a traditional nation-state are often found in TV news segments or video documentaries—a medium where details are difficult to convey, and maps have to be recognized in an instant (Figure 3A and 3B). A continuous area with fuzzy borders is sometimes used to indicate uncertainty due to a lack of reliable data (Figure 3C). Maps designed for newspapers and online publications are often more complex, representing attempts to decode the complex state of affairs in Syria and Iraq and their different ethnic, religious, and economic realities (Figure 4). They often provide additional context by marking captured cities and locations of combat, but also cultural geography or natural resources such as oil fields and major infrastructure. The Iraqi and Syrian national borders provide the visual frame within which the rapidly changing events unfolded.

Cartographic representations in mass media have notably changed since the summer of 2014 after IS announced the establishment of the caliphate under the banner of the Islamic State.

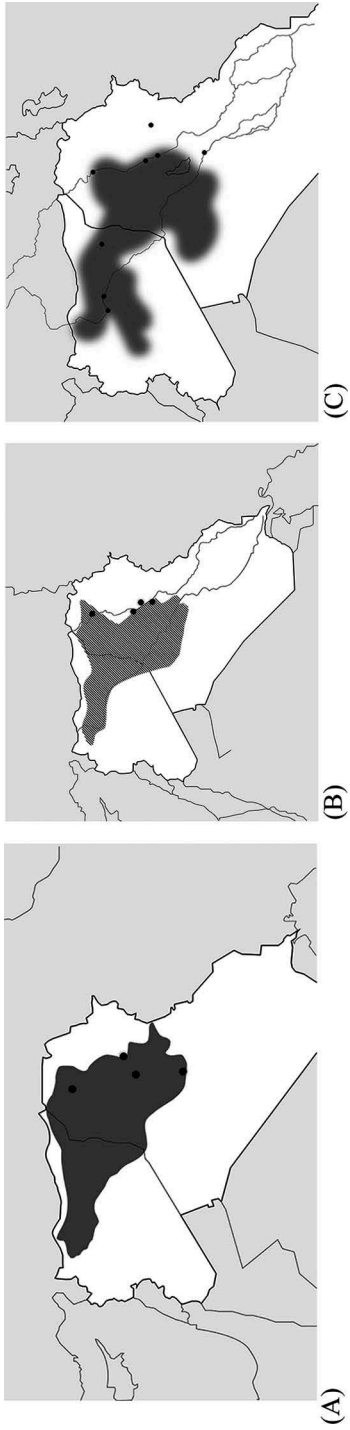


FIGURE 3 (A) News maps from June 2014 that represent ISIS as a continuous territory; schematic based on CNN Wire Service (2014). (B) Drawn with a tentative, hatched area; schematic based on Li (2014). (C) Drawn with a fuzzy outline indicating uncertainty; schematic based on Lister (2014).

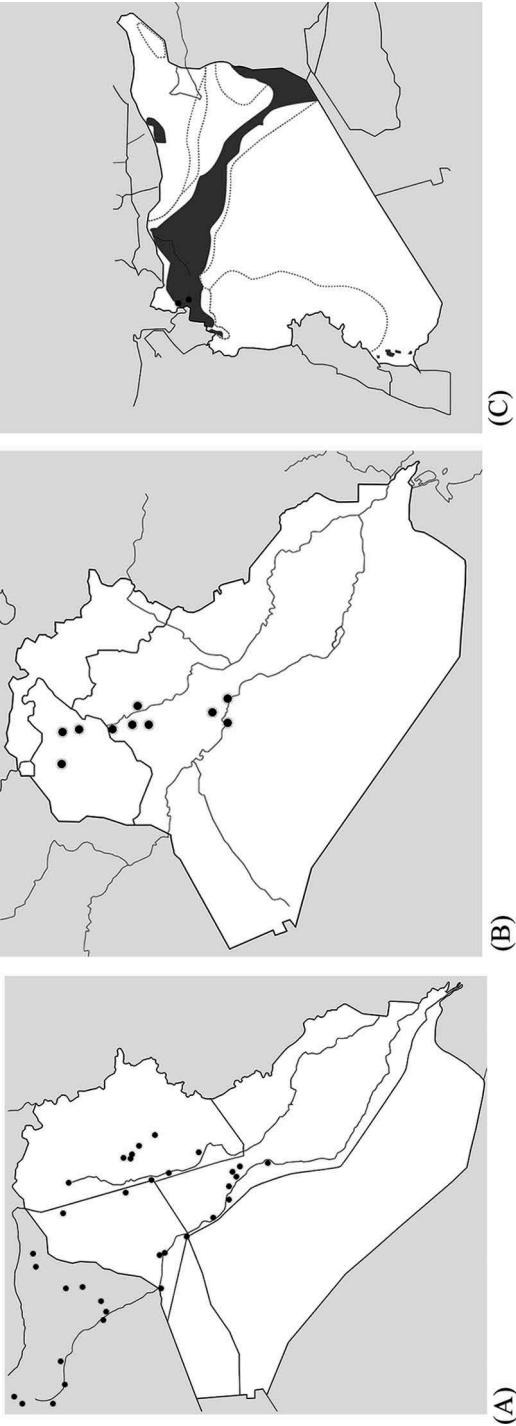


FIGURE 4 (A) Point map published June 2014 in the *Guardian*; schematic based on Black (2014). (B) Point map published 2014 by France24; schematic based on France24 (2014). (C) Zones of influence, September 2013; schematic based on Oweis (2013).

International news organizations struggled to find a visual language to give shape to the new geopolitical entity without legitimizing its territorial claims. Eight days after the declaration of the caliphate, BBC published a map that featured not only the familiar point symbols of captured cities but included the contours of the densely populated areas controlled by the insurgents, at that time still timidly textured, leaving out largely unpopulated deserts (Figure 5A). A few weeks later, a similar map appeared in the Vice documentary already mentioned, this time rendered in a saturated red without any additional detail. During the following weeks, a new visual vocabulary emerged, more stylized and recognizable. Point symbols became less prominent, and the representation of territory moved to the foreground. By 2015, the rhizomatic shape of the IS was firmly established in international media, rendered in countless variations and ever-changing outlines.

In many of these new maps, the territory no longer appears homogeneous but with different opacities that distinguish the varying levels of control held by the IS (Figure 5B). The shape of its contours represents the mapping process, however, more than the features of physical reality. Maps are constructed by circumscribing cities, infrastructure, and transportation routes with buffer entities—zones around features that have a certain width, chosen, for example, to express the likelihood of encountering insurgents within the zone. The size of the territory, therefore, depends on the selected buffer distance. The described method is, however, only one possible way to partition space based on the collected information. Several alternatives are possible, and each leads to a different visual outcome. Choropleth maps subdivide space into discrete units, usually based on administrative boundaries, and assign each cell to a conflict party. Voronoi geometry is another method for partitioning space based on point information.

Perhaps the most central actor in the development of the rhizomatic state map and its visual language is the Institute for the Study of War (ISW), a Washington, DC–based think tank focused on producing geointelligence on global military conflicts (Figure 6A). ISW has regularly published sanctuary maps of the territory controlled by Islamist insurgents in Iraq and Syria and has provided its data to news organizations, including BBC and Vice. ISW is a provider of open-source intelligence, meaning it analyzes sources that are publicly accessible, including public broadcasts, Web sites, and social media posts. ISW published the first ISIS sanctuary map in a September 2013 report; the iconic visual language, however, can be traced back to a report from 2006, in which ISW mapped the al-Qaeda insurgency in Iraq, already distinguishing between zones of control and zones of occasional presence (ISW 2006). Other intelligence services use a similar methodology to produce maps of the IS. The IHS Conflict Monitor, published monthly by the UK-based information agency IHS Markit, harvests open-source information about recent events from Twitter and YouTube, evaluates it for reliability, and manually geocodes it to produce detailed maps that chronicle the movement of IS forces and other armed actors in the region. The IHS conflict maps do not distinguish between support zones and control zones but introduce a different cartographic innovation: Like stills from an animated film, they highlight territorial gains and losses in weekly increments (Figure 6B).

By 2015, the ISIS sanctuary map had become the de facto standard map of the IS in Western media. Traditionally, tactical maps have used a symbology including arrows and sweeping curves to represent troop maneuvers and frontlines. The illegibility of the Syrian conflict, however, renders these visual languages obsolete. The sanctuary map is not straightforward to decode. It emphasizes territory and reflects the interiority of a state apparatus under construction. At the same time, though, it shows the fragile, fluid state of conflict and control. Its visual

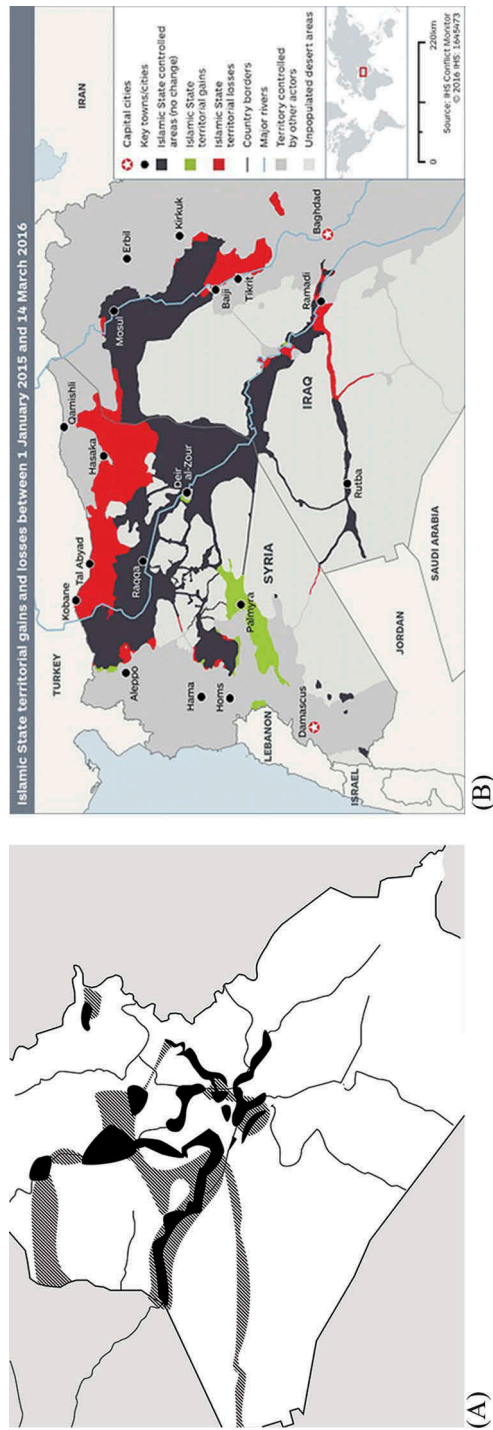


FIGURE 6 (A) Conflict maps from the Institute for the Study of War; schematic based on ISW (2006). (B) Conflict Monitor by IHS Markit (Strack 2016); used with permission. (Color figure available online.)

language is hybrid: It has sharp, articulated borders, but it is not always clear what precisely they represent. In some areas, they might correspond to actual roadblocks and barricades, whereas in other locations, they might be better understood as confidence intervals, because the presence of the IS is not permanent and stable. All attempts to create a single, objective map of the IS are thwarted by the rhizomatic nature of the insurgents' state: its heterogeneous global support networks, its sprawling online presence that reaches deep into popular culture, the popularity of the ISIS hymn "clashing of the swords" on YouTube and game modifications that let players virtually fight alongside ISIS. The regional campaign that includes governorates in Libya, Nigeria, Russia, and several other places of the world give an example of which form a despotism of the rhizome can take.

The rhizomatic nature of IS maps is not primarily owed to their mesh-like appearance, which is mostly derived from the population density of Syria and Iraq. It rather reveals itself in the short-lived nature of these maps, which have to be updated on a daily basis. It also reveals itself in the ambiguity and uncertainty of what their contours exactly represent: Are they borders, changes in the probability of an encounter of strategic importance, or a combination of these? Most fundamentally, the rhizomatic nature is indicated by the multiplicity of maps that show the same conditions from many different, sometimes contradictory perspectives, as is further explored in the following section.

THE ISIS SANCTUARY MAP, COMMUNICATION THEORY, AND CRITICAL CARTOGRAPHY

"Does this look like 'stopping ISIL's advance'?" Brennan (2015) asked in January 2015, in the conservative *National Review* [Figure 7A](#)). The map he referenced indeed looked alarming, as it showed a third of Syria being under the control of the insurgents (Drury 2015; [Figure 7B](#)). The map, first published in the *Daily Mail*, was based on information from the Coalition for a Democratic Syria (CDS), which collected its data "through on-the-ground networks including civilian councils, humanitarian organizations, armed actors, and media monitoring of independent Syrian channels" (Youssef 2015). It is worth noting that CDS is a Syrian-American group of organizations advocating for expanded U.S. support of the Syrian opposition. The dramatic size of the represented territory is the result of the map using provinces as the smallest unit of analysis. This is a legitimate choice that might have been driven by difficulty collecting more granular data for the whole country. It does, however, also mean that a large part of IS represented is empty desert.

The study of the persuasive effects of cartographic elements has a long history. During World War I, news maps provided daily updates of ongoing campaigns and were as common as the weather map (Woods 2016, 2). News maps are often derived from military operations maps, subject to simplifications and distortions. The representation of strength through the size of territory controlled is an important rhetorical element, which can be further emphasized through contrast, color, and projection. In 1942, Heinz Soffner, an Austrian in exile in the United States, pondered the representational problem of contested territory that includes large deserts and uninhabited areas, noting how easy it is to mislead even with accurate information (Soffner 1942). Soffner differentiated the, in his view, unintentional misrepresentations on maps by the allied forces from the systematic weaponization of cartography for purposes of persuasion by the

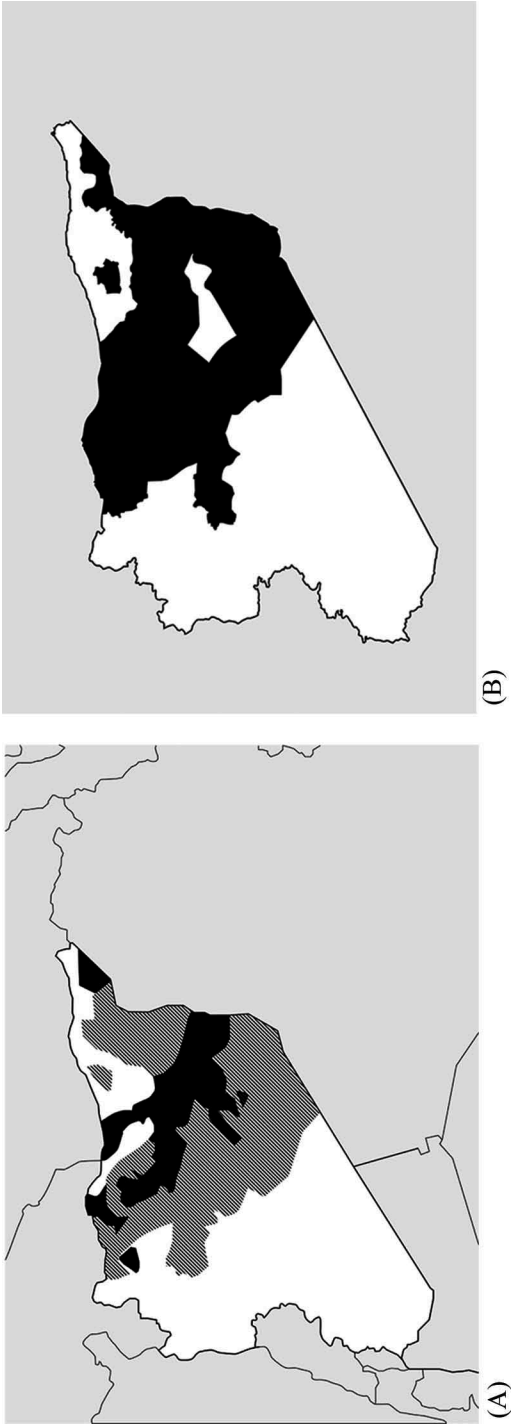


FIGURE 7 (A) Map published in the *Daily Mail*; schematic based on Drury (2015). (B) Schematic based on a map published by the Coalition for a Democratic Syria (Youssef 2015).

Nazis. The efforts of the latter were inspired by the German geopolitik school, which emerged during the 1920s and sought to develop maps as effective communication devices to promote the goals of the state. Its leading geographer, Karl Haushofer, called for a study of “suggestive maps” that emphasize what is desired and omit what is not wanted while avoiding outright cartographic lies (Haushofer 1928).

Although geopolitical cartography became discredited after World War II, the notion that maps are flexible devices for communicating information shaped the following decades and challenged the traditional idea of the map as an image of the world. Cartographic communication theory (CCT) values legibility over aesthetics and calls for a study of the perceptual characteristics of cartographic elements regarding their capacity to communicate data (Robinson 1966). Its ideals are scientific accuracy and objectivity. French cartographer Jacques Bertin proposed a system of visual variables, including shape, size, orientation, weight, hue, and intensity, that can be applied to point, line, or area symbols to express data variables such as location or population size (Bertin 1983). The perceptual qualities of each visual variable include the accuracy by which a user can recognize that variations in the encoded data values can be experimentally measured (Cleveland and McGill 1984). Based on the nature of visual perception, these variables offer a nuanced vocabulary for rhetorical purposes—capturing attention, emphasizing certain aspects, or suggesting connections between features. Visual variables can be used to enhance the persuasive effect of a map, for example, through the effective use of contrast, repetition, and recasting of complex data into simple categories (Muehlenhaus 2013).

Cartographic communication is an active field of research, especially in areas such as geovisualization and geographic information systems (GIS; MacEachren 1995; MacEachren and Kraak 2001). The concept of the map as a communication system, however, and especially the assumption that there can be an optimal, objective way to communicate arbitrary spatial information, did not remain unchallenged. According to its critics, the CCT model is not only overly reductive, no longer mentioning what it is that “cartographers are concerned to map,” but also inappropriate for describing the highly contextual process of reading a map (Guelke 2011). The aspiration of a clean semiotic system that defines all codes in a comprehensive legend is misguided, because each map depends on a broad range of unwritten conventions and includes a multiplicity of codes and meanings (Wood and Fels 1986).

Influenced by poststructuralist and critical theory, critical cartography challenges the fundamental assumptions of CCT. As Crampton (2001) put it, the search for the single optimal map with the clearest methods of communication is over. Instead of a linear transfer of information from the cartographer to the reader, critical cartography emphasizes the textual nature of maps. The reader actively constructs the meaning of the map in relation to the social and political realities in which the reader, map, and map maker are embedded (Crampton 2001). Each map carries more meaning than it ostensibly signifies; therefore, it can be analyzed beyond the scope of its original purpose and intent. Maps are assemblages of many different codes and subtexts, which reveal themselves in seemingly innocent details (Harley 1989). Critical cartography rejects the notion that maps can be objective, neutral representations. Critical cartography also rejects the notion of a unitary author, because a range of cultural codes and references find their way into the map without the map maker’s explicit intent. As further discussed in the following section, the line between map user and map maker has also become increasingly blurry. Most important, however, critical cartography views all maps as inherently political, entangled in

power interests. They are not merely representations, but also active agents in the discourse of power (Harley 1991).

From the perspective of CCT, we can compare the visual prominence of IS's territory across different maps expressed through the visual variable "size." The maps circulated by the IS unsurprisingly show the largest territory, followed by the choropleth map created by CDS. The area shown in rhizomatic sanctuary maps is generally smaller but varies considerably. Some versions of the sanctuary map appear skinnier than others, depending on the width of the buffer surrounding locations known to be under IS control. Other visual variables such as color and texture play a role; for example, whether the map differentiates between zones of influence and zones of control, or whether the territory is represented as translucent or has fuzzy edges. At the lower end of the spectrum are maps that do not show territory occupied by insurgents, but only cities and locations under IS control. What most maps since 2014 have in common is that they show the states of Syria and Iraq as a unit with the same background color, deemphasizing their national borders. Apart from representing the IS, these maps indirectly acknowledge its existence by deemphasizing the nationhood of the two countries.

THE SYMBOLIC REALISM OF THE SANCTUARY MAP

A critical approach goes beyond the explicit codes of the map symbology. Harley (1988) described the "symbolic realism" of maps in which the scientific language itself becomes a symbol of authority: "what appears to be a cartographic 'fact' may also be a cartographic symbol" (299). The maps of the ISW serve as an example. The nonprofit organization, which maintains close ties to the U.S. defense sector and is not, as some might assume, part of a university or academic organization, has published some of the most detailed and authoritative maps of the IS. The maps themselves offer a fine-grained differentiation of territory of three to five different zones of control labeled in the language of combat, explicitly defined in the legend. A support zone, for example, is "an area free of significant action against ISIS and which permits logistics and administrative support of ISIS's forces." Subtle kinks in the outlines of these territorial zones suggest geographic detail. The emblem of the organization is featured prominently on top of each map. The symbolic language of the sanctuary map signals precision and authority: This map is a scholarly product based on reliable sources, not random social media posts from the Internet. It should not be confused with the maps made by a growing community of conflict mappers, who use news reports, videos, Twitter feeds, and posts in online forums to construct their maps. This distinction is relevant, because the ISW analysts also use publicly available online data as the basis of their maps, in some cases, perhaps even the same sources. Although the ISW acknowledges these sources in its methodology description, its maps project a consistency and unity not found in the amateur maps, which speak in a multiplicity of voices.

Besides its own prolific map production, the ISW works with the graphics departments of major Western news organizations to make custom maps for their publications. The visual language of the resulting maps is therefore also determined by the medium and the preferences of its editors. In an ISW map for a Fox News TV segment, the IS appears as a single brightly hatched area, whereas in an animated Web map for the *New York Times*, it is rendered so subtle that it almost disappears. Although it would be foolish to infer motivations from the symbology

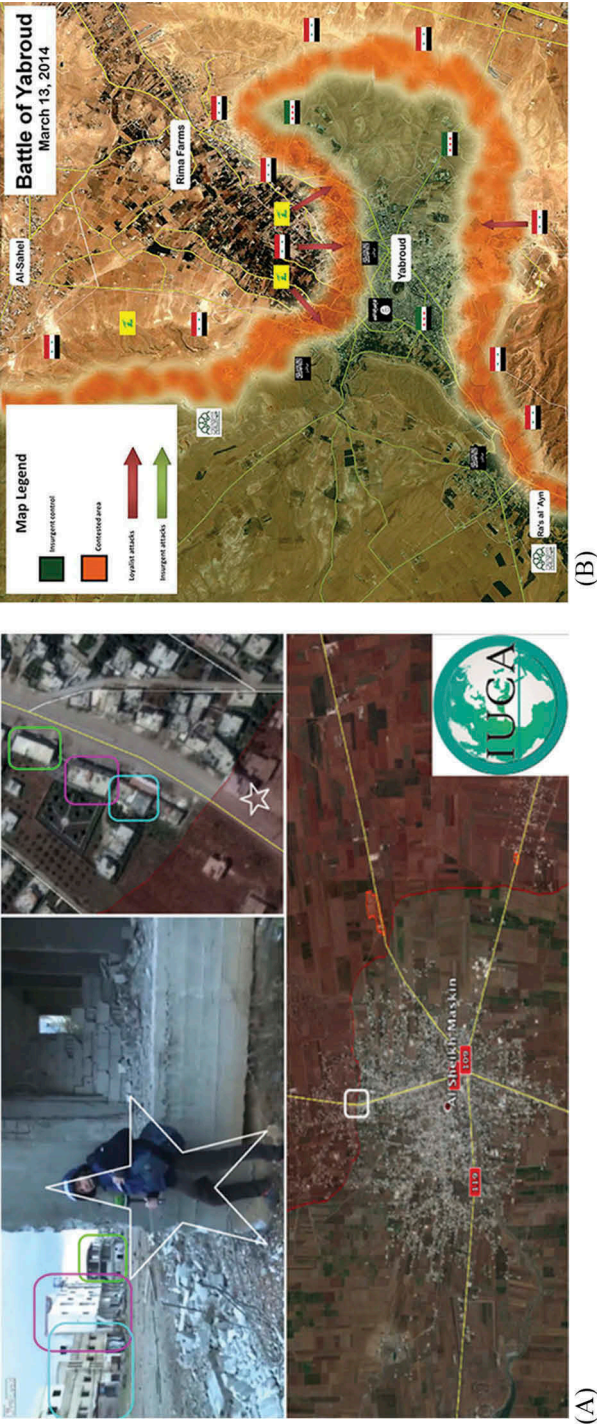


FIGURE 8 (A) Composition showing the triangulation of geographic features in online maps and cell phone footage. Caption of the tweet reads: “Frontline verification in #SheikhMaskin on Dec 31. #Assad forces did NOT take ‘most of the city’” (IUCA 2016). (B) Conflict map by Peto Lucem, March 2014 (Lucem 2013). (Color figure available online.)

of every single map, it is clear that the multiple authors of each map have interests that are hard to disentangle. Intelligence organizations such as ISW, whose policy recommendations can generally be described as hawkish, combined with the politics of news organizations, put together with information from government agencies of states involved in the conflict. Because actual data from the conflict in the area are scarce, available maps and data sources are incessantly remixed and recontextualized.

The process of remixing and recontextualizing, however, does not start with the cartographers in news agencies or policy institutes, who themselves draw from a variety of maps and data collected from different sources. Until now, the discussion has revolved around the products of this process, maps as meaningful representations. The following section concentrates on the construction of meaning on the side of the map makers through distributed practices of data collection, verification, and analysis. As I argue, these practices have given rise to a new visual language for constructing and communicating evidence.

AMATEUR VISUAL FORENSICS AS NONREPRESENTATIONAL CARTOGRAPHY

The first Gulf War of 1991 has become known for its pervasive use of electronic media by the U. S. Army, with night-vision videos recorded from the perspective of cruise missiles en route to their targets broadcast on public television. In analogy, the current Middle Eastern conflict is the first war in which social media plays a defining role. Twitter, YouTube, and Reddit groups have emerged as central forums for real-time news about the conflict, disseminating live reports, footage from the battlefield recorded by smartphones and GoPro wearable cameras, drone videos, and analyses superimposed over satellite images. The digital craftsmanship of IS propaganda is well known, but the opposition forces also make ample use of such media formats. According to Atwan (2015, 105), commanders of anti-IS and rebel groups employ digital media crews with state-of-the-art equipment. Their purpose is to record and disseminate videos of operations as a means of reporting to foreign sponsors of their military operations. The Syrian government and Russian troops use similar methods to circulate the word of their military success. Civilians also participate in the war of images. Kurgan (2017) described the work of the Aleppo Media Center, a group of antigovernment citizen journalists who remain in the besieged city and fly drones to document the destruction that surrounds them.

A global community of amateur cartographers scrutinizes such videos and other online media to create detailed maps of the conflict. Its members conduct what could be described as online visual forensics: They aggregate online media, extract geotags and time stamps, and if those are not available, try to identify place and time based on visual cues. For example, the distinct shape of a swimming pool or a distant tower is a feature that can also be identified in satellite images and, after verification with other sources, georeferenced and time stamped (Figure 8). By cross-referencing media, a spatial context is established that serves as evidence for people who are not familiar with the depicted locations. Weizman et al. (2010) described forensics as a spatial problem that is twofold: First, it concerns the spatial relationships of the events under investigation, and second, the relationship between evidence and the public forum in which it is presented.

Several amateur cartographers have risen to international fame. Dutchman Thomas van Linge, who started mapping the Syrian conflict at the age of sixteen from his family home in Amsterdam, has created some of the most accurate conflict maps available without ever visiting

the Middle East (Kuntz 2015). Pieter Van Ostaeyen, a historian with a focus on Arabic and Islamic studies, has been studying and reporting on the Syrian conflict since its beginning. Eliot Higgins, the founder of the Bellingcat blog, is a citizen journalist who has conducted complex visual forensic analyses of the Syrian and Ukrainian conflicts and frequently discusses methodological approaches for identifying manipulated footage and disinformation.³ Peter Ridilla creates animated maps that show the shifting frontlines in past and current conflicts.⁴ As Bajak (2015) noted, creating accurate maps of global conflicts requires an amount of labor that exceeds the resources of most media agencies, and independents like van Linge and Higgins are increasingly filling this void.

Amateur conflict mapping is part of a larger set of practices centering on the production of volunteered geographic information (VGI; Goodchild 2007). Individuals involved in VGI are typically not affiliated with map-making institutions and collaborate through participatory media platforms. Examples of VGI include the OpenStreetMap project, social accountability initiatives, and disaster relief efforts (Meier and Leaning 2009; Okolloh 2009; Zook et al. 2010). Although crowd-sourcing can be criticized as unstructured and biased, it can offer the advantage of broad access to local knowledge and a number of participants that is unattainable in traditional projects. Volunteers are driven by a wide range of motivations and often bring specific expertise to the project (Coleman, Georgiadou, and Labonte 2009). Amateur conflict mappers, however, might lack the institutional credibility of organizations such as ISW or IHS, even if they work with the same methods, sources, and diligence. Whereas official conflict maps use a refined cartographic language, the visual artifacts produced by amateurs are often more raw and unprocessed, revealing their tools of production: open-source GIS tools, Web mapping platforms, or Google Earth imagery annotated with markers and overlays. In many cases, this lack of refinement might be the result of a lack of training in visual media and cartography. I argue, however, that the rawness is not unintentional; it follows a visual logic that serves the purpose of presenting evidence.

INDEXICAL MAPS AND NONREPRESENTATIONAL CARTOGRAPHY

Whereas the ISIS sanctuary map abstracts the underlying sources of information to convey a bigger picture, the amateur forensic maps, in many cases, do the exact opposite. Their cartographic choices are guided not by the goal of creating the best representation of a given data set, but instead by making the process of data generation and spatial reasoning legible. Figure 8 shows an example created by the Institute for United Conflict Analysis (IUCA), a group of amateur conflict mappers around the Canadian Robert Cross (Cérez and O'Brien 2016). IUCA's conflict maps are an assemblage of video stills, satellite Web maps with colored overlays, and annotations that link common features in all of these elements. By keeping sources recognizable, the authors preempt criticisms regarding a lack of rigor and reliability. The visualization ideals of clarity, abstraction, and consistency obscure the heterogeneous nature of the underlying data and gloss over ambiguities (Drucker 2011). For amateur map makers collecting their own data, such idealized maps would invite scrutiny concerning the validity of their sources. Instead, their visual vocabulary focuses on cross-referencing and triangulating original footage: bridging different scales, identifying view directions, and estimating spatial distances by re-creating perspectives. In the case of doubt,

every viewer can look up the respective location on Google Earth and compare it to the features highlighted on the map. This visual strategy is all the more relevant because a large part of the conflict mappers' work is to challenge official accounts; expose deliberate attempts to mislead; identify old, misattributed, or manipulated footage; and identify Twitter accounts that spread misinformation. On Twitter, supporters of rebel groups, the Syrian government, and the Russian army are engaged in heated controversies that use visual artifacts to support their claims. Bellingcat gained international attention for identifying manipulated and mislabeled footage of the Ukrainian conflict (Bellingcat 2015).

The practice of amateur conflict mapping calls attention to the nonrepresentational aspects of cartography. Amateur conflict maps are not intended to be canonical and universal representations of reality; instead, they play a transient and contextual role in the discourse. They are constantly changed and updated and are never considered finished. Fragments of impromptu maps are exchanged on Twitter and online forums to resolve disagreements over the possible locations depicted in the footage. Participation in this discourse requires considerable skills and geographic literacy; the maps are not made for instant consumption. It is, therefore, less productive to focus on what these maps represent than to consider their roles as different practices and discourses. A growing body of literature on nonrepresentational or postrepresentational cartography acknowledges this shift from maps as representations to the practices and effects of mapping. Kitchin and Dodge (2007) argued that the fundamental question of cartography is ontogenetic rather than ontological: not concerned with what maps are or what maps do, but how maps become. In their view, maps only exist in relation to a particular practice, which includes all the different ways in which maps are made and maps are used.

The nonrepresentational perspective does not imply that the phenomenological qualities are irrelevant. The visual artifacts produced by groups such as IUCA underscore this point. Traditional maps represent in the sense that they are used to describe something that is not present. This includes the underlying data set, which is a representation of the absent phenomenon, just like its graphical translation (Kurgan 2013). In terms of Peircean semiotics, traditional maps represent objects through the use of symbolic and iconic signs—signs based on arbitrary conventions and signs that can be recognized based on their resemblance to the object of reference (Peirce 1998). The assemblage of photos, satellite scenes, and annotations, on the other hand, only points to what is already visible; they draw connections and show relationships. In other words, they are presentations rather than representations. In Peircean terms, the conflict maps are indexical; they point to a phenomenon and emphasize a causal relationship. A white dot on a satellite scene is a consequence of light reflected from an object and registered by the satellite's optical instrument. In this sense, amateur forensic maps are examples of indexical visualizations that emphasize raw traces over symbolic abstractions (Schofield, Dörk, and Dade-Robertson 2013; Offenhuber and Telhan 2015). Instead of synthesis and abstraction, indexical maps construct evidence by framing and present their original sources in an accountable way. Instead of revealing abstract patterns, their visual arguments strive for establishing identity and correspondence between the various events, objects, and spaces depicted in the footage they harvest from the Internet. Like maps, they are necessarily incomplete and rely on the viewer's ability to "put the pieces together."

CONCLUSION

In this article, I have argued that the IS claim to statehood has created a dilemma for international news media because mapping the state means granting it legitimacy in the symbolic space of representation. Media organizations have responded to this dilemma with a new type of state map that does acknowledge the vast territory held by the insurgents, but at the same time depicts it as precarious, fluid, and distinct from traditional representations of nation-states.

The multiplicity of these representations matches the rhizomatic aspects of the Islamic state. Although the IS strives for a total control of territory, many of its units operate quasi-autonomously, intertwining control over physical space with pervasive and global operations in cyberspace. Consequently, a map of the IS can never be complete or finished, and instead always remain in a state of in between.

The specific visual languages of IS maps call attention to conventions of political maps that are often taken for granted. If we were to apply the same mapping strategies to traditional democratic nation-states, charting only the centers and infrastructures of actual state power, they would also appear less homogenous and more insecure. As Wood and Fels (1986) observed, “Outside the world of speech, outside the world of maps, states carry on a precarious existence: little of nature, they are much of maps, for to map a state is to assert its territorial expression, to leave it off to deny its existence” (64).

In this particular case, the deconstruction of traditional state representations in IS maps serves specific power interests in the conflict. This observation reveals itself in the difference between the sanctuary maps and the maps circulated by the IS, as well as in the modulation of cartographic symbols by advocacy groups to underscore their political goals. Although the sanctuary map renders the IS as unstable and changing, it paradoxically signals the opposite about its underlying data sources. By including details of locations, zones, and boundaries that are usually left out of political maps and rendering them in a consistent visual language, the map normalizes and stabilizes heterogeneous and often uncertain sources of information.

Whereas the IS sanctuary maps signal authority through their use of a consistent and differentiated symbology, the visual artifacts made by amateur crisis mappers and visual forensics experts use a different strategy to present evidence. Besides the rhizomatic state map, these artifacts constitute a second cartographic innovation. Practices of amateur cartography have existed for a while, but only the proliferation of social media from war zones and crisis areas has given rise to mapping practices by amateurs who have never been to the conflict zone. I argue that their visual artifacts attempt to make the process of data generation and construction legible. They constitute a form of nonrepresentational cartography that focuses on presenting relationships rather than representing data.

As of summer 2017, the IS no longer exists in the shape it had at the time of its largest extent in late 2014. That does not mean the territory and its populations are safe now, however, as they are still the targets of repeated attacks. As a result, the situation has become even less representable. Insurgencies are difficult to map when the conflict parties share presence in the same territory and control “little beyond the ground they stand on” (I. Black 2014; J. Black 2016) noted,

There are good reasons to question the use of maps as intellectual tools for understanding conflicts. Maps create a comfortable mental distance, dissolving human lives into spatial and temporal relationships and aesthetic patterns. They create a false sense of knowledge of the territory, people, and events. In a time when most wars no longer happen between countries, but

rather within countries and between actors with vastly different resources and capabilities, the traditional notions of territory, control, and borders are losing their meaning. The rhizomatic map of the IS could well indicate a new reality of territorial conflict, in which the traditional logic of war between nation-states no longer applies. At the same time, it shows the failure of cartographic thinking, a futile attempt to represent something unrepresentable. As the territorial control of the IS seems to come to an end, the group retreats into cyberspace, instigating global attacks through digital communication strategies.

Kaplan (1994) presented a harrowing vision of war that is no longer waged by states. In this postmodern condition, the map of the nation-state is utterly inadequate for representing power relationships between multiple competing factions. His notion of the “last map” shares many similarities with the examples of the maps discussed in this article:

Imagine cartography in three dimensions, as if in a hologram. In this hologram would be the overlapping sediments of group and other identities atop the merely two-dimensional color markings of city-states and the remaining nations, themselves confused in places by shadowy tentacles, hovering overhead, indicating the power of drug cartels, mafias, and private security agencies. Instead of borders, there would be moving “centers” of power, as in the Middle Ages. . . . Henceforward the map of the world will never be static. This future map—in a sense, the “Last Map”—will be an ever-mutating representation of chaos.

This “Last Map” is an apt metaphor of complexity and chaos; as a map, however, it would hardly be useful. To be accurate, its cartographers would need to possess god-like omniscience. Its dynamic three-dimensional display is always on the verge of a semiotic meltdown, struggling with ambiguous concepts such as spheres of power and influence, which even the insurgents might have difficulty assessing. As a canonical tool of communication, maps are poorly suited to capture the multidimensional assemblage of global communication networks and physical places encompassed by the IS. The practices of amateur cartographers, on the other hand, who use map fragments to collectively construct evidence, underline the undiminished relevance of mapping.

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NOTES

1. As of March 2017.
2. Deleuze and Guattari used the term *war-machine* not in a strictly military sense, but as a broader metaphorical concept.
3. See <http://www.bellingcat.com>.
4. See <http://www.youtube.com/user/MultiTalent10>.

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