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Blind maps and blue dots: the blurring of the producer–user divide in the production of visual information

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Citation
Grootens, J. P. F. (2020, April 23). *Blind maps and blue dots: the blurring of the producer–user divide in the production of visual information*. Retrieved from https://hdl.handle.net/1887/87593

Version:	Publisher's Version
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Note: To cite this publication please use the final published version (if applicable).

Cover Page

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Title: Blind maps and blue dots: the blurring of the producer–user divide in the production of visual information
Issue Date: 2020-04-23

In this chapter the cartographic process is considered to comprise two stages. The first is mapping, the surveying of a site and the collecting, selecting and interpreting of data. In the second stage, mapmaking, the data is decoded, edited and transformed into a map. Historically, amateurs—non-specialists who lack training, knowledge and skills—have always played a role in cartographic processes, but predominantly as surveyors. Recently, however, digital technologies have democratized the tools to create, record, edit, produce and distribute visual information and enabled amateurs to create and publish their own maps. This chapter looks into the practices of amateur conflict mapmakers and their efforts to interpret and transform data into maps. The objective is to find an answer to the question: How do mapmaking practices of specialists and non-specialists differ in terms of how the work is produced, in terms of the visual strategies that are employed, and in the way the work is made public? And what impact do these possible differences have on how the maps and mapmaking practices are perceived?

This chapter talks about two Thomases, both desk cartographers, one an eighteenth-century Spanish specialist mapmaker who spent most of his mature life working on a map of his home country, the other a twenty-first-century Dutch amateur who published several maps of a conflict in a country three thousand kilometres from his home.

Amateurs and Specialists, Surveying and Mapmaking

'The best way to make a map is by walking and measuring the land, but such a method is not possible for a private individual.' This is a quote from Spanish geographer Tomás López (1730–1802).[1] As head of the *Gabinete Geográfico*, the geography cabinet, López was responsible for the *Atlas geográfico de España*, the first comprehensive and detailed map of Spain, a project started in 1766 and published posthumously in 1804. For reasons of lack of funding, personnel and technical means, rather than having the land surveyed by specialists, López used a 'desk cartography' method where an expert cartographer interprets the fieldwork of locals who lack geographic knowledge. In the case of the *Geographic Atlas of Spain*, village priests were approached to answer a questionnaire and draw a map of the territory around their town or village. The survey resulted in hundreds of maps that were inconsistent, as the priests had no scientific training and their level of drawing skills varied. It took López many years to interpret the answers and sketches of the clergymen and incorporate the information in a map.

Ironically, the accuracy of López's atlas of Spain was tested a few years after it was published when the country went to war with France.[2] Napoleon Bonaparte's armies soon found out that the maps lacked precision. The errors were caused by López's non-topographic surveying method. López had learned the method from Frenchman Jean Baptiste Bourguignon d'Anville (1697–1782), one of the eighteenth century's most prestigious cartographers, but had applied it with less rigour and his instructions to the clergymen who conducted the surveys had not been specific enough.

The example of the *Geographic Atlas of Spain* addresses two dichotomies that are the subject of this chapter. There is the division between mapping and

1 San-Antonio-Gómez, Velilla and Manzano-Agugliaro, 'Tomás López's Geographic Atlas of Spain in the Peninsulan War: A Methodology for Determining Errors'.
2 Ibid.

The Situation in Syria

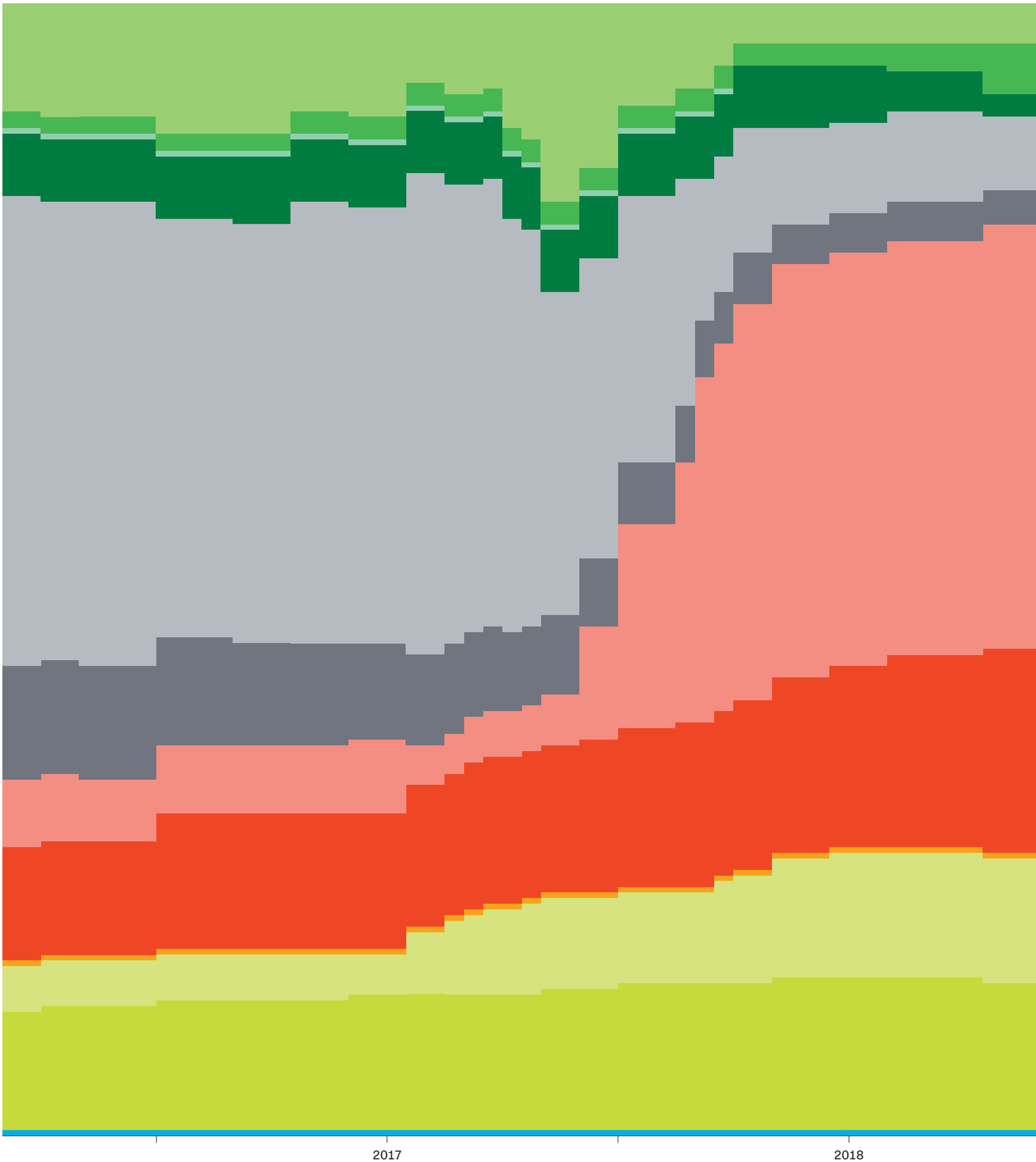
Moderate Rebel
Mixed Rebel
Jihadi
Loyalists
Hezbollah
Kurdish
Israeli

Moderate Rebel
Mixed Rebel/Jihadi
Jihadi
Loyalists
Hezbollah
Kurdish
Israeli

Rebel low
Rebel high
Mixed Rebel/Jihadi low
Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
Kurdish
Israeli

Rebel low
Rebel high
Mixed Rebel/Jihadi low
Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
Kurdish low
Kurdish high
Israeli

Rebel low
Rebel high
Mixed Rebel/Jihadi low
Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
Syrian Democratic Forces low
Syrian Democratic Forces high
Israeli



This is a timeline of the 64 'Situation in Syria' maps that Thomas van Linge published on Twitter between January 2014 and April 2018. In each map, the area a certain faction controlled is measured. This is represented by a colour code for which the colours of the 'Situation in Syria' maps have been used. The horizontal width of each colour bar corresponds to the time between the date of publication and the moment a new edition of the map was published. The equal widths of the colour bars show the great regularity of Van Linge's updates. The legend on the left page is based on the terminology that Van Linge uses in the maps.

mapmaking: the difference between the collecting of data to describe a situation and on the other hand the editing and transforming of that data into a map. The other is the distinction between specialists and non-specialists, between those who are trained, have knowledge and skills and those who lack these but who instead have knowledge of, or access to, a site, or are willing to make inexhaustible efforts to collect and compare data and convert it into a map. The Spanish example also addresses the role a map plays in claims of statehood. Most maps in this chapter deal with this issue, but this will not be a topic of investigation.

The method of drawing a map without surveying a site, but instead by interpreting several data sources, has been called armchair cartography, remote cartography and desk cartography. None of these names is entirely satisfactory to me. The adjective 'armchair' is often used to indicate that someone has little or no practical knowledge or experience but still regards herself to be a specialist. This is not the case with Tomás López, who had studied with one of the most renowned cartographers of his time and deliberately chose to not go out to survey the whole of Spain for practical and economic reasons. As most mapping nowadays involves satellites, either as recorders or transmitters of data, the name remote mapping does not seem precise enough to describe the phenomenon of a cartographic method without on-site surveying. Desk cartography seems the most accurate description. However, I prefer the term desktop cartography, which refers both to a piece of furniture and the working area of a computer screen as well as to desktop publishing (or DTP), the creation of documents using page-layout software on a computer. Most cartography nowadays is desktop cartography. With aerial photography and satellite-sensing technologies it has become less important to survey on site. Evolving technologies also resulted in the emergence of on-site mapping practices, such as fitness tracking, which was the topic of a previous chapter.

In this text, which addresses the dichotomies of mapping/mapmaking and specialists/non-specialists, I will look at a specific case of desktop cartography: amateur conflict mapmakers who map sites that are dangerous to access, about which opposing territorial claims are made, and that are in constant flux. First I will address the phenomenon of conflict mapmaking, comparing specialist and non-specialist practices that map situations of political, social and/or geographic conflict. Then I will delve into how these maps are made public, shared and become part of a public debate. I will examine the visual strategies of the cartographic language of amateur conflict mapmakers. In a second section I will discuss more in detail the practice of one specific amateur conflict mapmaker.

Mapping Conflicts

In a 2017 article, head of the Information Design and Visualization programme of Northeastern University Boston Dietmar Offenhuber, who has a background in urban planning and whose research focuses on the relationship between design, technology and urban governance, addresses the challenges, including ethical issues, of cartographic representations of the self-proclaimed Islamic State (IS) in Iraq and Syria.[3] Offenhuber argues that the sovereignty of the IS territory is symbolically challenged through cartographic choices that reflect the diverse

interests of the mapmakers. Maps of the IS territory made by Western news organizations depict densely populated cities and the transport routes connecting them, but not the deserts or sparsely populated land in between. The mesh-like structure makes the territory look unstable, fluid and ambiguous.[4] The open structure visually depreciates the IS territory and thus avoids similarity to a traditional state map.[5] Offenhuber compares the cartography of news organizations with the maps that IS itself produces. In these maps the 'caliphate' is depicted as a closed and contiguous shape, a unified state covering large parts of Syria and Iraq, even including sixteen provinces, each with its own name.[6] Putting a name on a map is the equivalent of planting a flag on a piece of land, it is making a claim. Offenhuber presents a third map that, like the IS map, displays the area of the 'caliphate' as large as possible, although not for ideological but for economic reasons. The Coalition for a Democratic Syria, a Syrian-American organization advocating for expanded US support of the Syrian opposition, uses for its map the provinces as the smallest cartographic unit.[7] The area controlled by IS therefore looks impressively large, the map might be persuasive to get support for the purposes of its mapmaker, the territory, however, consists for a large part of empty desert. These three examples show that a map always represents the ideological, economic or other concerns of the mapmaker.

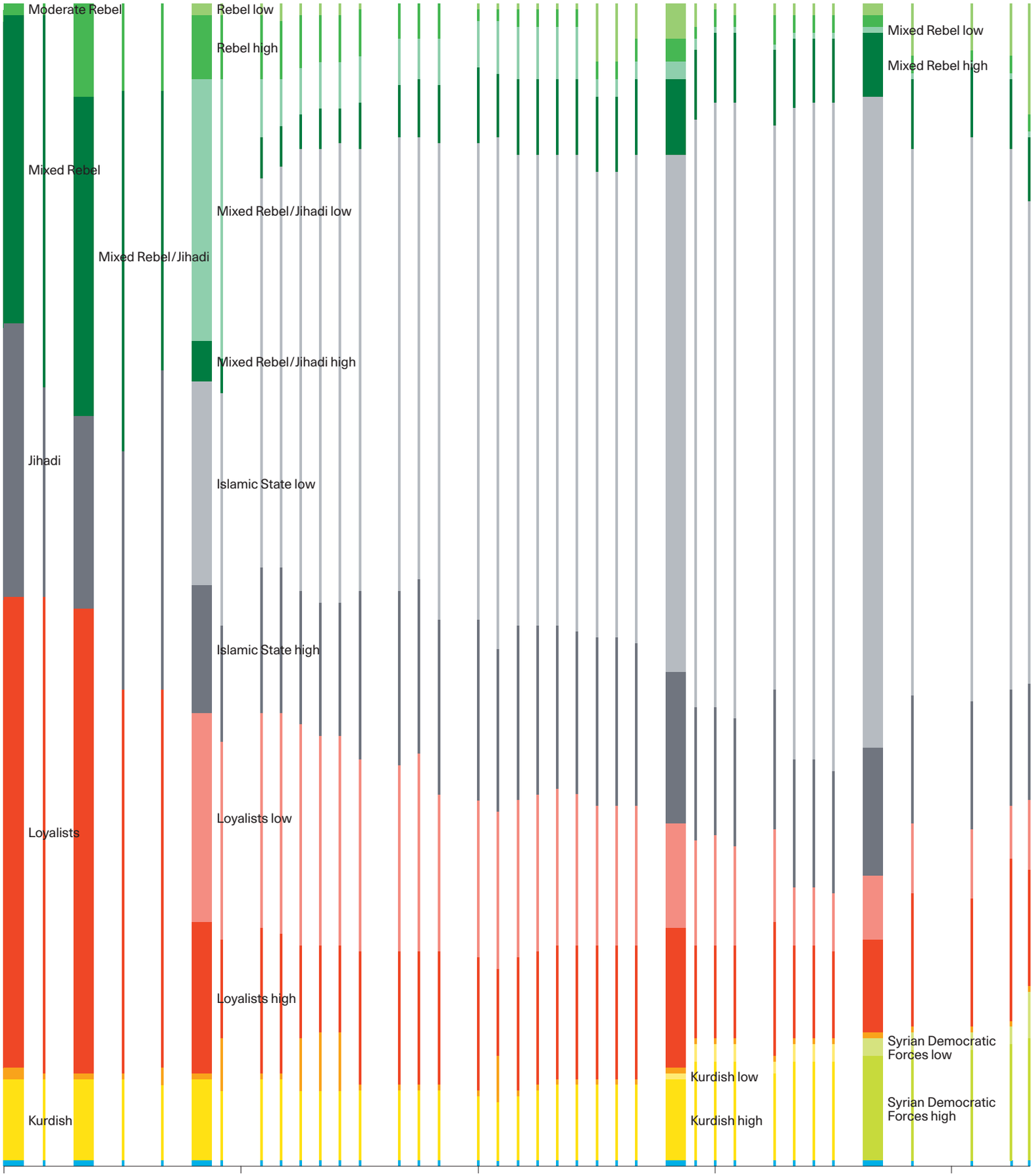
In addition to the practices listed above, Offenhuber's article examines maps made by amateur conflict mapmakers[8] and visual forensic experts, who use and cross-reference data from social media such as movies and photographs taken by mobile phones and drones, georeferenced twitter messages and satellite imagery. The aggregated data is verified, timestamped, geotagged and used as the basis for the cartographic and other visualizations that these practices produce. Compared with the official conflict maps of news organizations, the work of the amateur conflict mapmakers often looks more raw and unprocessed.[9] This absence of refinement might originate in a lack of training in graphic design or cartography, Offenhuber argues, however, that the visual strategies developed by the non-specialists follow a visual logic that serves the purpose of presenting evidence. The visual vocabulary of the amateur conflict mapmakers focusses on showing the employed methods of cross-referencing original footage. If a user is in doubt, she can utilize Google Earth to look up the location and compare it with the map and its highlighted features. Offenhuber states that this strategy fits the endeavours of amateur conflict mapmakers to challenge official reports, expose attempts to mislead and to identify misinformation.[10]

One of the practices to which Offenhuber refers is the investigative journalist's website Bellingcat. Today a network of staff and contributors in more than twenty countries, the platform was founded in July 2014 by British citizen journalist Eliot Higgins. I will discuss a blog post on the Bellingcat website by Higgins from 15 July 2014, the early days of the platform, about a chemical weapon attack in Ghouta, Syria.[11] The post consists of a text interspersed with annotated satellite images and video stills. At one point in the blog post a zoomed-in fragment of a satellite image is introduced as a 'piece of the puzzle' and that is how the post feels: image by image, the reader is led along one piece of evidence to the next until the inevitable conclusion.[12] The text reads as a voice-over to a slideshow of annotated images. The imagery is crude: blurry, different in size, occasionally consisting of

3 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.
4 Ibid., 2.
5 Ibid., 4.
6 Ibid., 6.
7 Ibid., 12.
8 Instead of the term 'mapmaker' Offenhuber uses the term 'mapper' to describe the amateurs who map conflicts. While the Oxford English Dictionary gives two different definitions of the verb 'to map': to represent an area on a map and to record in detail the spatial distribution of something, the OED only gives one definition for the noun 'mapmaker': a person who draws or produces maps, only covering the first definition of the verb. This goes back to the opening line of this chapter in which I state that the cartographic process consists of two stages, the surveying of a site and the collecting, selecting and interpreting of data which I name mapping and the decoding, editing and transforming of data into a map, which I name mapmaking. The term 'mapmaker' seems more focused on the second stage, on the editing and transforming of data, and seems to neglect the collecting and surveying. To me it seems that Offenhuber by using the term 'mapper' is putting more emphasis on that first stage of the cartographic process. In this chapter, however, I will use the term 'mapmaker' to avoid the impression that the maps of amateur conflict mappers, as Offenhuber calls them, are less constructed, more unmediated than the maps of traditional mapmakers.
9 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.
10 Ibid., 19.
11 Higgins, 'Identifying Government Positions during The August 21st Sarin Attacks'.
12 Ibid.

5.2

The Situation in Syria: Changes of the Legend



Moderate Rebel
Mixed Rebel
Jihadi
Loyalists
Hezbollah
Kurdish
Israeli

Moderate Rebel
Mixed Rebel/Jihadi
Jihadi
Loyalists
Hezbollah
Kurdish
Israeli

Rebel low
Rebel high
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Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
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Rebel low
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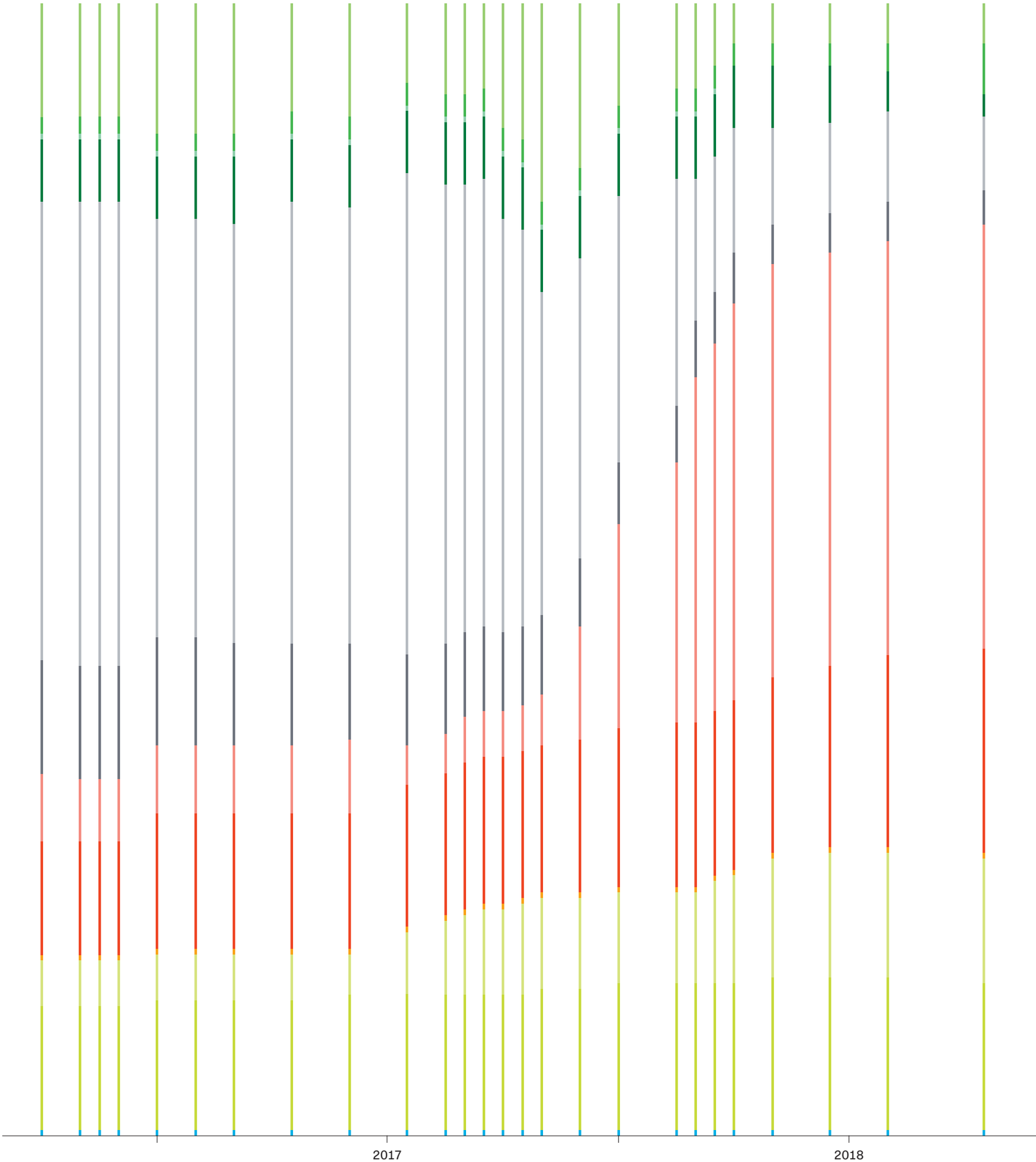
Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
Kurdish low
Kurdish high
Israeli

Rebel low
Rebel high
Mixed Rebel/Jihadi low
Mixed Rebel/Jihadi high
Islamic State low
Islamic State high
Loyalists low
Loyalists high
Hezbollah
Syrian Democratic Forces low
Syrian Democratic Forces high
Israeli



Thomas van Linge adapted the legend of the 'Situation in Syria' maps several times. This timeline shows these changes. In June 2014, Van Linge introduced a second lighter shade of each legend unit to distinguish between areas that are densely populated and areas with low population density. Other changes relate to the naming of the legend.

juxtaposed fragments. The annotations are mostly symbols with texts referring to dates, camera positions and names of sites. There are also overlays of transparent-coloured shapes marking areas. Circles of various diameters demarcate the site of the attack. The annotated images look unembellished and matter of fact, not made to be dwelled upon but to serve a purpose in constructing a narrative in which the maps are used as arguments.

According to Offenhuber, the visual strategies of amateur conflict mapmakers emphasize post-representational aspects of cartography. The maps they produce are not intended to be universal representations, but rather play an ephemeral and circumstantial role in a certain specific public debate or context.[13] The output of these practices is used for exchanges on online platforms like Twitter, they are constantly adjusted and updated and are never considered to be finished. They are therefore by definition processual. Maps produced by official news sources are updated just as often, but the difference between these and amateur conflict maps is that the maps of the second category are embedded in a public exchange that is easily accessible for all and without hierarchical differences in the exchange, as opposed to the dialogue between an individual and a media organization of reputation.

Referencing the semiotic theory of American philosopher Charles Sanders Peirce (1839–1914), Offenhuber indicates what to him is the difference between traditional cartography and maps of amateur conflict mapmakers. Traditional maps use symbolic and iconic signs based on conventions and signs that resemble the object of reference. On the other hand, conflict maps—assemblages of annotated photographs, satellite imagery and video stills—point out what is visible, draw connections and show relations. Whereas traditional maps are symbolic abstractions, conflict maps are 'indexical visualizations', according to Offenhuber. Indexical is a term of Peircean semiotics to indicate that a sign points to a phenomenon and emphasizes a causal relationship.[14] Offenhuber gives the example of a white dot on a satellite image that 'is a consequence of light reflected from an object and registered by the satellite's optical instrument'.[15]

Although I follow Offenhuber's analysis that there is a difference between traditional and conflict maps, I find the term indexical visualizations for the latter problematic, as it falsely suggests these are unfiltered, unconstructed images. Seeing is not neutral. In his book *Representing and Intervening*, Canadian philosopher of science Ian Hacking argues that images produced by optical instruments like binoculars and microscopes are constructed.[16] Hacking writes extensively about the interventions needed to see with microscopes.[17] Lenses, stains to highlight certain parts of cells (some of these being so toxic that they destroy the tissue), and the flattening of material between glass slides are examples of interventions in microscopic observation. If we take Offenhuber's satellite image example, then there, too, optical instruments intervene in the process of seeing. Lenses create distortions of colours and shapes. Also, the angle of the camera and the relief of the Earth's surface cause misrepresentations. Satellite images are often 'orthorectified', that is, they are corrected for topographic relief, lens distortion and camera tilt, before they are used as 'map accurate' background image in the production of maps.

American philosopher and pedagogical theorist John Dewey (1859–1952) believes that many epistemologies are based on the mistaken analogy between knowing and seeing an object. Knowing is conceived as what is 'supposed to take place in the act of vision'.[18] Dewey is critical of the model of knowing as a passive relation between the knower and the object known, which he calls the 'Spectator Theory of Knowledge'.[19] Peirce, Dewey and also Hacking are representatives of the philosophical tradition called pragmatism that understands knowing the world as inseparable from agency in it.[20]

To me, the difference between traditional cartography and conflict maps lies not so much in the visual strategies of the amateur mapmakers, but in the fact that the maps are embedded as arguments in a public debate. Not how it looks, but how it is shared and distributed enables the work of amateur mapmakers to be part of an ongoing dialogue in which the claims made on (or by) a map can be challenged. This becomes apparent when we look at a practice that uses similar visual strategies as the amateur conflict mapmakers, but uses different platforms and contexts to make its work public.

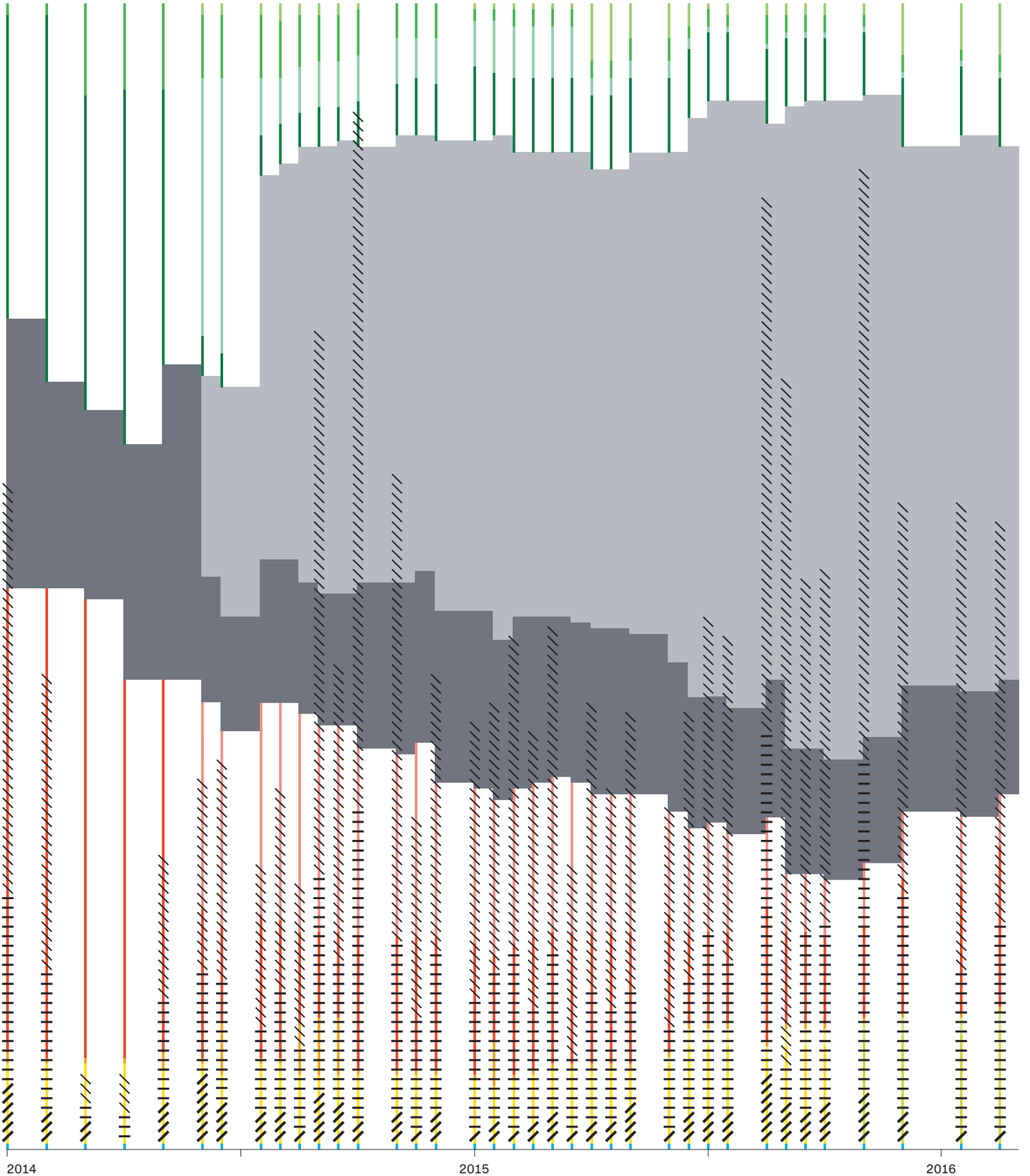
Forensic Architecture is the name of a London-based research agency that uses architectural methods like digital and physical models, 3D animations, and cartography to investigate human rights or environmental cases that are not adequately addressed by the state in which they took place.[21] The visualizations[22] produced by Forensic Architecture are montages of diverse overlapping materials, footage from mobile phones, drones, security cameras and satellites, 3D computer models and annotational layers. There are similarities with the assemblages of amateur conflict mapmakers. However, the work of Forensic Architecture is more skilfully produced and has a higher degree of sophistication in terms of how it communicates its message. I am a critical fan of the work of Forensic Architecture; I am fascinated by the methods it employs, because the use of actual visual material gives its output a sense of authenticity, immediacy and urgency. The blurry recordings from security cameras that provide the raw material for its work feel unstaged and the issues investigated are matters of life and death. They are presented in a dry, matter-of-fact way, so that the conclusions seem inevitable. However, I have doubts about the unequivocalness of the conclusions of the investigations of Forensic Architecture and, especially, the supposed unambiguity of the design of its presentations.

In January 2019, I saw Forensic Architecture's exhibition *Forensic Justice* at 'base for art, theory, and social action' BAK in Utrecht.[23] It was not the first time I had seen an exhibition with works of Forensic Architecture, but earlier shows included a single work by the agency. The Utrecht exhibition contained eight investigations. Seeing them together made me shift my focus from the individual investigations to the overall approach, to the methodology, the visual strategies and the formats. Forensic Architecture avoids a term like 'project' on its website or in its monograph.[24] This word might suggest that a particular work is finished. Instead, it uses 'investigation' to describe its output.

One of the investigations presented at the exhibition in Utrecht was a video titled 'Pro-Government Strikes on M2 Hospital—Aleppo, 2016', which deals with the attacks of the Omar Bin Abdul Aziz Hospital, also known as M2, in Aleppo, Syria, between June and December 2016.[25] The video begins with a voiceover

13 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.
14 Buchler, *Philosophical Writings of Peirce*, 107.
15 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.
16 Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science*.
17 Ibid., 186–209.
18 Dewey, *The Quest for Certainty: A Study of the Relation of Knowledge and Action*, 26.
19 Ibid.
20 *Stanford Encyclopaedia of Philosophy*, 'pragmatism', accessed 6 September 2019, https://plato.stanford.edu/entries/pragmatism.
21 From the 'about' page of the Forensic Architecture website: 'Forensic Architecture (FA) is a research agency, based at Goldsmiths, University of London. We undertake advanced spatial and media investigations into cases of human rights violations, with and on behalf of communities affected by political violence, human rights organizations, international prosecutors, environmental justice groups, and media organizations.' Forensic Architecture, 'About'.
22 In this chapter I will use 'visualization' as specified in the Oxford English Dictionary's first definition of the term, a 'representation of an object, situation, or set of information as a chart or other image,' and not as the OED's second description, 'the formation of a mental image of something'. For the verb 'to visualize' I use the second definition in OED, to 'make something visible to the eye,' rather than the OED's first description, to 'form a mental image of'.
23 BAK, 'Forensic Justice'.
24 Weizman, *Forensic Architecture: Violence at the Threshold of Detectability*.
25 Forensic Architecture, 'Airstrikes on M2 Hospital'.

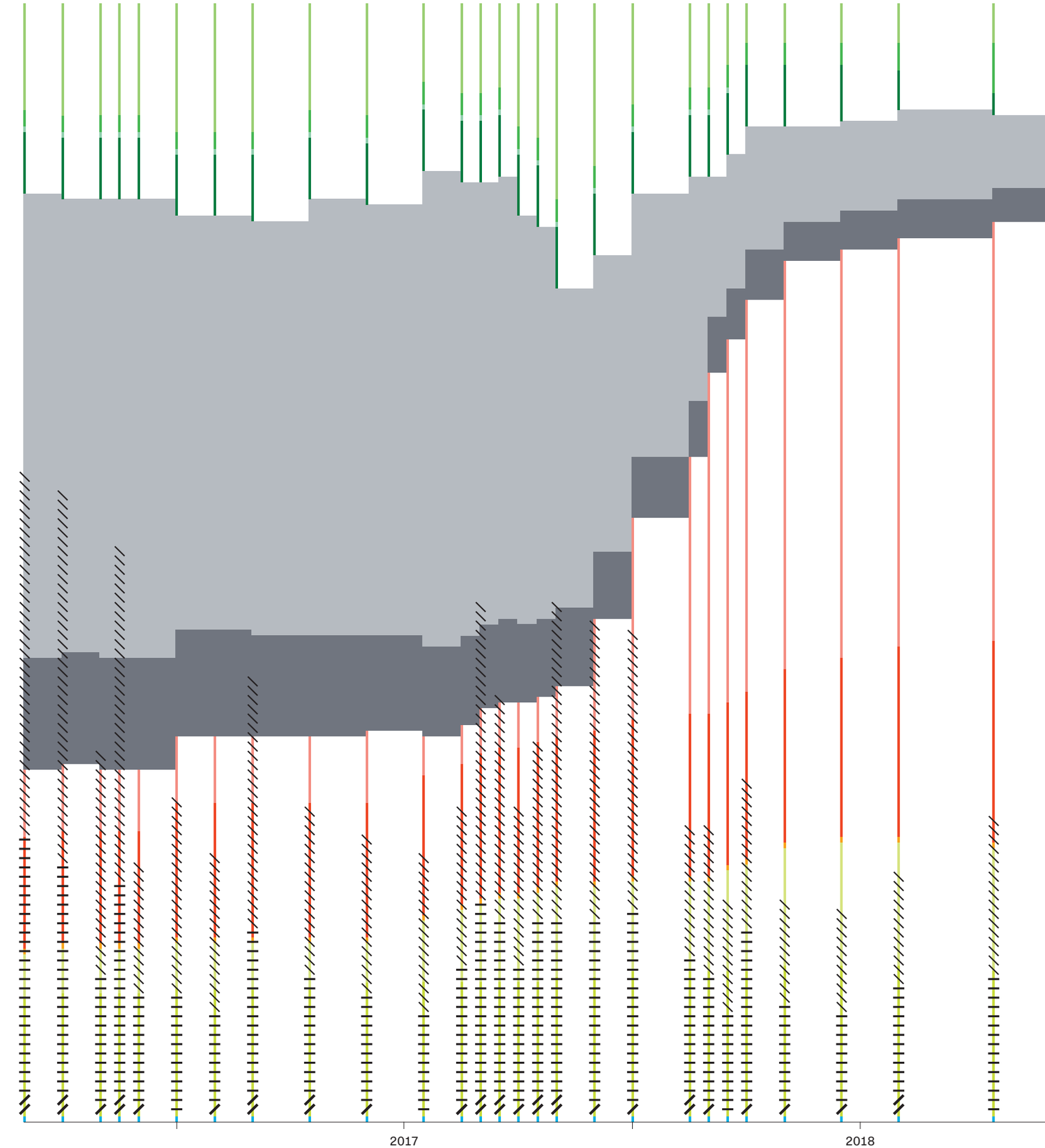
The Situation in Syria: Responses



Retweets
Likes
Replies

Islamic State low
Islamic State high

This overview shows the response on Twitter to the ‘Situation in Syria’ maps compared with the amount of area that the jihadist group Islamic State controlled. This timeline shows a parallel between the rise of the Islamic State and the Twitter-likes and retweets of the ‘Situation in Syria’ maps.


2017
2018

stating that according to the Syrian American Medical Society, the M2 Hospital was subject to fourteen strikes by pro-government forces in 2016. No further proof for this claim is given. The video shows an animation of an architectural computer model of the M2 hospital and its surroundings, reconstructed using satellite photographs, CCTV and handheld camera footage. The computer rendering is light grey and partly filled in with still images from the videos. The animation navigates between the computer model and video and photo footage that is placed inside the model. The animation is a continuous shot, starting inside the hospital at the moment the 16 July 2016 attack took place, moving through the hospital, leaving the building and going into the street, looking back at the building, moving up, looking down and zooming out showing a satellite photo of the city of Aleppo. During the whole video, the animation is accompanied by a voiceover explaining the methods of making the model and about the events shown. It is striking that the video offers no room for doubt. Claims are made without rebuttal. Also what I would call the design of the video—the cool light-grey computer model, the continuous movement of the camera, the compactness of the narrative—communicates self-assurance and control and contributes to this air of doubtlessness.

The enquiries exhibited in Utrecht looked more or less similar in terms of the amount of data collected, the speculations on what took place at the situation that was investigated and the degree of elaboration of the presentation design. Seeing several projects exhibited together, I could not help but think that these investigations were completed. Nothing in the Utrecht exhibition suggested that the research was still going on or that there was additional material that needed to be processed. In the way the enquiries were shown in the exhibition, doubt was only raised about the official accounts of the cases that were researched, not about Forensic Architecture's own methods, the extent of its knowledge about the research subject, or the format in which the findings are shown. This might be caused by the presentation of the projects. The absence of doubt was felt to a far lesser degree when I viewed the same projects on the Forensic Architecture website. In the online context, a user has access to the employed media and resources, can find information about commissioners and funding behind the project, and is able, through e-mail and social media, to get in touch with the investigators and to share the information.

In previous chapters, I used the terms 'ontological' and 'ontogenic' to describe the difference between critical cartography and post-representational cartography. Ontological refers to how things are, ontogenic to how things become. My critique of the work of Forensic Architecture and of the work of many amateur conflict mapmakers is that they approach the map as ontologically secure, I fail to see any doubts about the format used and about its status as being complete. Many critical cartographers question the event they are investigating, but not the format they employ. They suggest that a map is a map and it is constant. In that sense their work has a positivist approach that is similar to representational cartography, and uses a comparable but updated technicist language. In the visual language of the maps a variety of heterogeneous image recordings are layered. It is a forensic style equivalent to the use of a handheld camera in film to convey a sense of reality. Only when embedded in a particular context, and when the provenance of the data and the motives of the mapmaker are known, can a map be held accountable for its content.

Offenhuber calls the work of amateur conflict mapmakers and forensic specialists 'presentations' rather than 'representations'.[26] He uses the term presentation for the work of amateur conflict mapmakers because their visualizations 'point to what is already visible', unlike traditional cartography's use of symbols and abstractions to *represent* a situation or an area of land.[27] I find the distinction between presentation and representation a problematic one in this regard. The term presentation suggests here that conflict maps are unmediated and unconstructed. I disagree, I regard the use of visual material of amateur conflict mapmakers and forensic specialists as constructed, not as authentic, unmediated or objective, and therefore view their output as representations.

In my view, the key difference between the visualizations of amateur conflict mapmakers and forensic specialists on the one hand, and more conventional cartography on the other is the emphasis put on visual evidence by the former. In the two examples I gave earlier, Bellingcat's reporting on the 2014 chemical attack in Ghouta, and Forensic Architecture's video of the investigation in the 2016 M2 hospital attacks, visual proof is extensively discussed. In fact, the majority of the reporting consists of a detailed presentation of the evidence, while significantly less attention is paid to providing an overview or answers. In a lecture at the TU Berlin in 2018, author, cultural scientist and curator Anne Huffschmid talked about her concept of 'visibilization', making visible what is hidden, as opposed to visualization, representing information.[28] Huffschmid used this term in relation to her work on *desaparecidos*, the missing, in Mexico, people who as a result of the current escalation of violence in the country have been violently kidnapped, killed and have disappeared. The purpose of her work is the retrieval of anonymous dead people into the social space and the visualization of the crimes to which they have fallen victim.[29] The term visibilization is appealing because of its emphasis on the process of unearthing data and on visualization as evidence. To me, visibilization is an appropriate term to describe the work of both the amateur conflict mapmakers and forensic specialists. Rather than Offenhuber's distinction between representation and presentation, I propose the dichotomy visualization and visibilization to describe the difference between traditional cartography, as used in news media, by political institutes and the state, and the maps produced by amateur conflict mapmakers and forensic experts like Forensic Architecture.

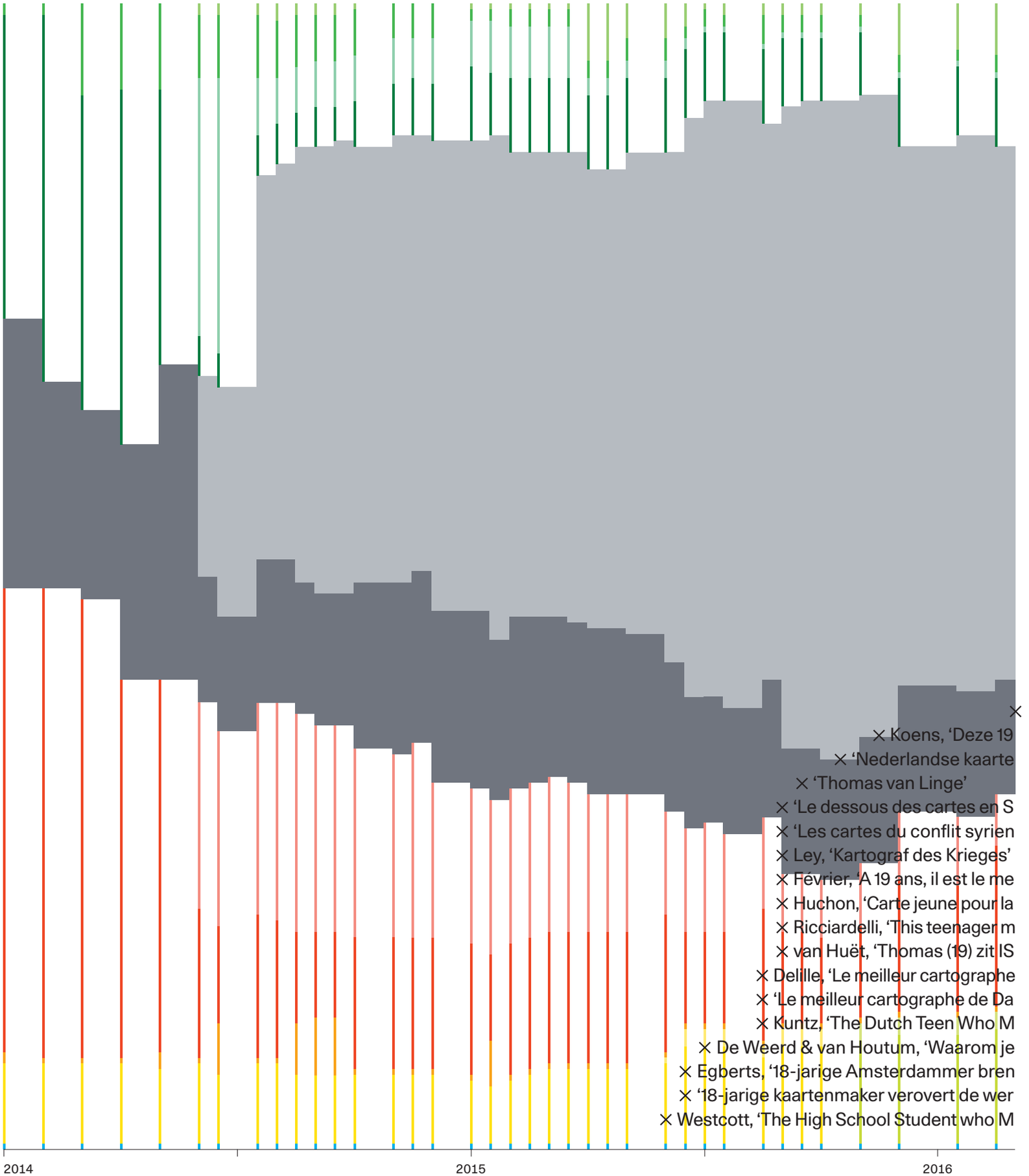
One issue in Offenhuber's text that deserves further exploration is the 'raw and unprocessed look of the work of amateur conflict mapmakers'.[30] Offenhuber speculates that the absence of refinement originates in a lack of training in graphic design or cartography, but also notes that notwithstanding the raw appearance of the maps, their design follows a visual logic that serves the purpose of presenting evidence. In the next section I will look at the processes and tools used in one specific practice of an amateur conflict mapmaker and how these inform the design of the maps.

The Situation in Syria

'IMPORTANT: map about the current situation in #syria. green = regime, brown = #FSA, blue = contested' is the text that accompanied the first map of Syria posted

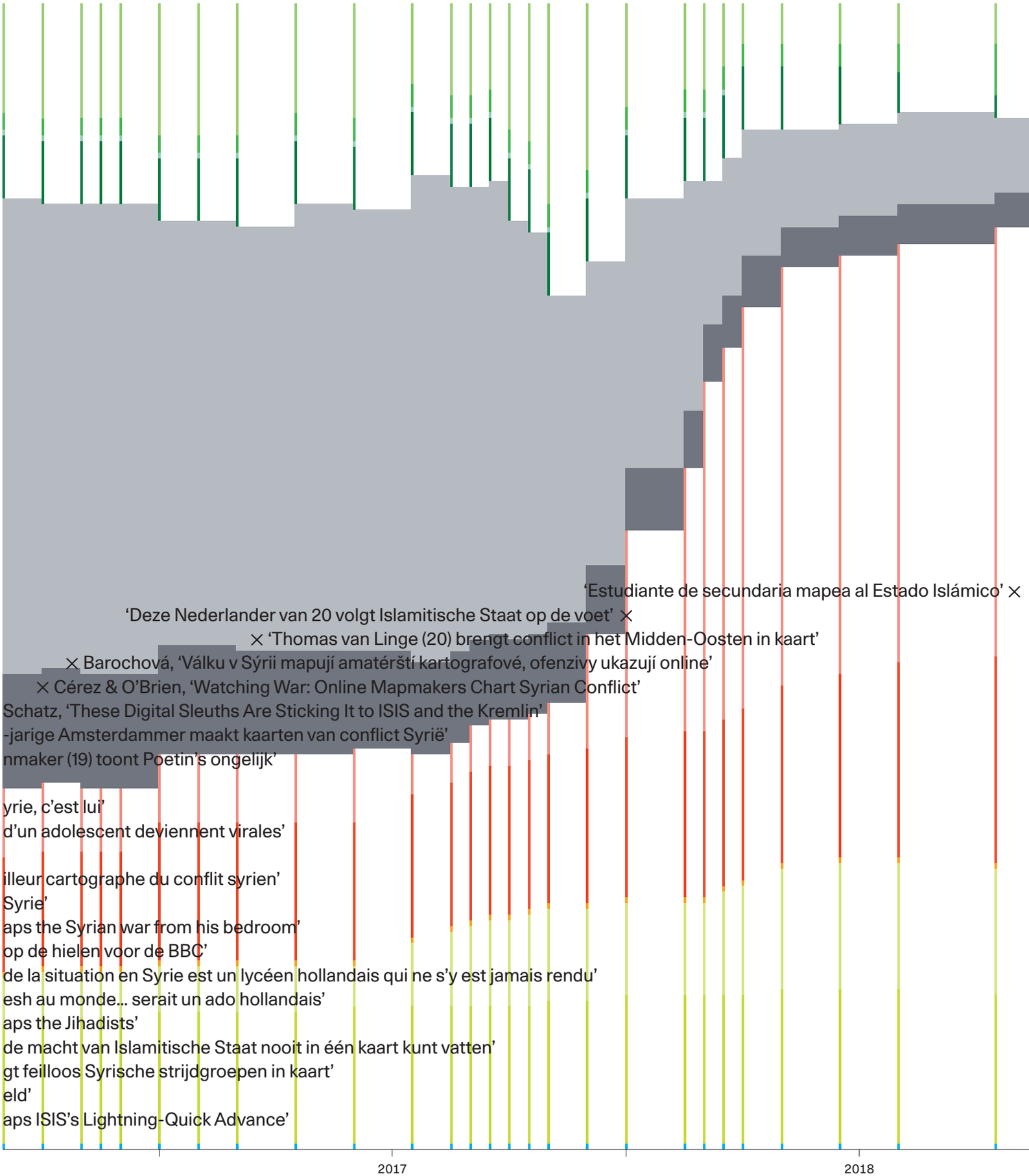
26 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.
27 Ibid.
28 Huffschmid, 'Reconstructing Conflict: Mapping as Materialization of Contested Memories and Invisibilized Crime'.
29 Huffschmid and Braig, '"Knochenlesen"als Grenzüberschreitung. Forensische Anthropologie als Beitrag zur Gewaltverarbeitung und transnationaler Wissenstransfer, am Beispiel des argentinischen EAAF (Mexiko, Spanien)'.
30 Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.

The Situation in Syria: Recognition



Islamic State low
Islamic State high

In this timeline articles and news items about Thomas van Linge are compared with the amount of area that the jihadist group Islamic State controlled. This overview shows a parallel between the rise of the Islamic State and the media attention for Thomas van Linge and his ‘Situation in Syria’ maps. The parallel can also be seen in the news items themselves. In the articles a contrast is created between the violence of war and the territorial ambitions of Islamic State and a teenager, living with his parents 3,000 km from Syria, who makes maps from his bedroom using simple means.


‘Estudiante de secundaria mapea al Estado Islámico’ ×
‘Deze Nederlander van 20 volgt Islamitische Staat op de voet’ ×
× ‘Thomas van Linge (20) brengt conflict in het Midden-Oosten in kaart’
× Barochová, ‘Válku v Sýrii mapují amatérští kartografové, ofenzivy ukazují online’
× Cérez & O’Brien, ‘Watching War: Online Mapmakers Chart Syrian Conflict’
Schatz, ‘These Digital Sleuths Are Sticking It to ISIS and the Kremlin’
-jarige Amsterdammer maakt kaarten van conflict Syrië’
nmaker (19) toont Poetin’s ongelijk’
yrie, c’est lui’
d’un adolescent deviennent virales’
illeur cartographe du conflit syrien’
Syrie’
aps the Syrian war from his bedroom’
op de hielen voor de BBC’
de la situation en Syrie est un lycéen hollandais qui ne s’y est jamais rendu’
esh au monde... serait un ado hollandais’
aps the Jihadists’
de macht van Islamitische Staat nooit in één kaart kunt vatten’
gt feilloos Syrische strijdgroepen in kaart’
eld’
aps ISIS’s Lightning-Quick Advance’
2017
2018

on Twitter by Dutch political science student Thomas van Linge on 24 June 2013.[31] Van Linge's map documents the situation in Syria where, since the Arab Spring in 2011, an ongoing civil war is being fought between the Syrian Arab Republic, an alliance of opposition rebel groups including the Free Syrian Army, jihadist groups, mixed Kurdish-Arab Syrian Democratic Forces and ISIS, the Islamic State in Iraq and Syria. Iran, Russia, Turkey, the United States and other countries are involved or provide support to one of the factions. The *Encyclopaedia Britannica* lists the Syrian Civil War as the second deadliest war of the twenty-first century, estimating that one in ten Syrians have been killed or wounded by the fighting, causing at least 470,000 deaths.[32] After the first map in June 2013, Van Linge published several dozens in the subsequent years. During the same period he also posted on his Twitter feed maps of Iraq, Ukraine, Libya and other regions. The maps of Syria, however, are his most important subject. For this text I will concentrate on this particular series.

Thomas van Linge was a sixteen-year-old high school student when he published his first map in 2013. Two years earlier his interest in the Middle East was sparked after seeing a TV report on the brutal suppression of protests during the 2011 Egyptian Revolution.[33] Van Linge started following the events in Egypt, Libya and Syria during the so-called Arab Spring, the series of anti-government protests across North Africa and the Middle East of the early 2010s.[34] Frustrated about not being able to find a map of Syria that makes a clear distinction between areas controlled by moderate Syrian rebels and that by jihadist movements like Jabhat al-Nusra, he decided to make one himself.[35]

Van Linge uses a variety of sources for his maps: social media like Twitter, Facebook and YouTube, local news media, the official accounts of the various forces as well as personal contacts with activists in the Free Syrian Army in Aleppo and in the Kurdish region north of Aleppo.[36], [37] Van Linge estimated he had around one thousand sources for his maps to confirm claims of territorial control. Some of the sources he found are retweeted to Van Linge's Twitter account. Since joining Twitter in 2013, Van Linge has sent an average of twenty tweets and retweets a day.[38] Most of his time is spent on filtering and combining data, trying to verify claims and looking for additional information to rebut assertions. For his research, Van Linge taught himself Arabic via YouTube movies and learned to identify the various weaponry depicted in the online sources.[39] When a map is ready it is shared on Twitter.

Van Linge has spent several hours every day collecting data to update his map, using a smartphone, a laptop and an Internet connection. Once every two weeks he shared a new edition of 'the situation in Syria' map on Twitter. According to Van Linge, it does not make sense to publish the map more frequently because the differences it would then show are too small.[40] Soon after Van Linge published his first map of Syria, his number of Twitter followers started to grow exponentially, from around two hundred before the first map to more than 52,000 in August 2019. The maps were retweeted and cited by news media like the *Huffington Post*, Lebanon's *Daily Star*, *The New York Times*, CNN and *Der Spiegel*, as well as by academic institutions such as the University of Texas.[41] Middle East experts have described Van Linge's maps as 'among the most useful' and as 'one of the best published on what's going on in Syria' and lauded the frequent updates.[42]

The moment Van Linge's maps were picked up by the international media coincided with the rise of jihadist group Islamic State. The feelings of disgust about their acts as well as fear about the territorial ambitions of the jihadist group created a need for clear information, which is something 'the situation in Syria' maps provided. Many titles of the articles and reports on Van Linge's work refer to the jihadists and Islamic State and not to the broader issues of the Syrian civil war that Van Linge was trying to capture in his maps.

Today, Thomas van Linge is considered a Syria specialist as a result of his cartographic work. In 2018, together with Carla del Ponte, former member of the Independent International Commission of Inquiry on the Syrian Arab Republic of the UN Human Rights Council, Koos van Dam, scholar, diplomat and former Syria envoy, and others, Thomas van Linge was one of nine experts invited by the Dutch parliamentary committee on foreign affairs to speak about Syria.[43] The Dutch newspaper *Algemeen Dagblad* quotes Van Linge describing himself as a specialist during the meeting with the parliamentary committee.[44]

When asked about it, Van Linge refused to call his mapmaking a hobby.[45] 'Hobby' would suggest it is a fun activity. He would rather call it a passion. On his Twitter account Van Linge describes himself as an activist: 'Passionate about freedom, democracy, human rights and the preservation of our wildlife. Reporting on (and mapping out) wars, uprisings and conservation.'[46] In the many video interviews with him from the summer of 2015, a flag of the Free Syrian Army features prominently on the wall of his bedroom in his parents' house where he worked on the maps. In the interviews he is clear about his ambitions to fight the Assad regime through media.[47] Notwithstanding this position, he indicates that he wants his maps to give a picture, as objective as possible, of what is going on in Syria.[48] The international media certainly seem to interpret them as such, presenting them unfiltered as neutral information. There is also criticism, but that is limited to indicating that more Thomas van Linges are needed, more maps from multiple perspectives, using diverse techniques to get a nuanced picture of the conflict.[49]

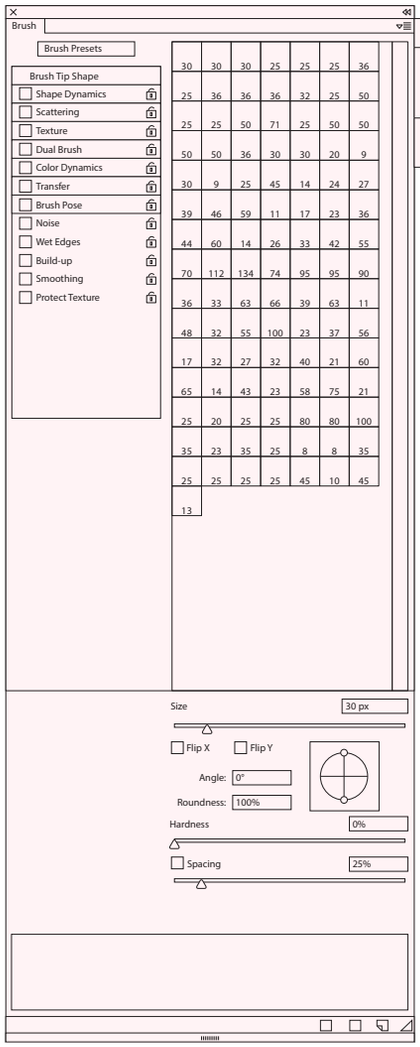
Van Linge's untitled first map of Syria from June 2013 shows a fragment of the Middle East with light grey for land, light blue for water and black lines for state borders. The map is tightly cropped around Syria, which has more detail than the surrounding area. The country has a yellow-brown sandy coloured base with thin black lines for province borders, city names in a black sans serif typeface set in different sizes to indicate the size of the city. Placed next to the city names are circles in varying dimensions in accordance with the size of the city. The circles are coloured to indicate the ruling party, green for the forces of the Syrian regime of President Bashar al-Assad, brown for the Free Syrian Army, an opposition army group, and blue for cities whose ruling party is contested. The map has no title, nor a map key.

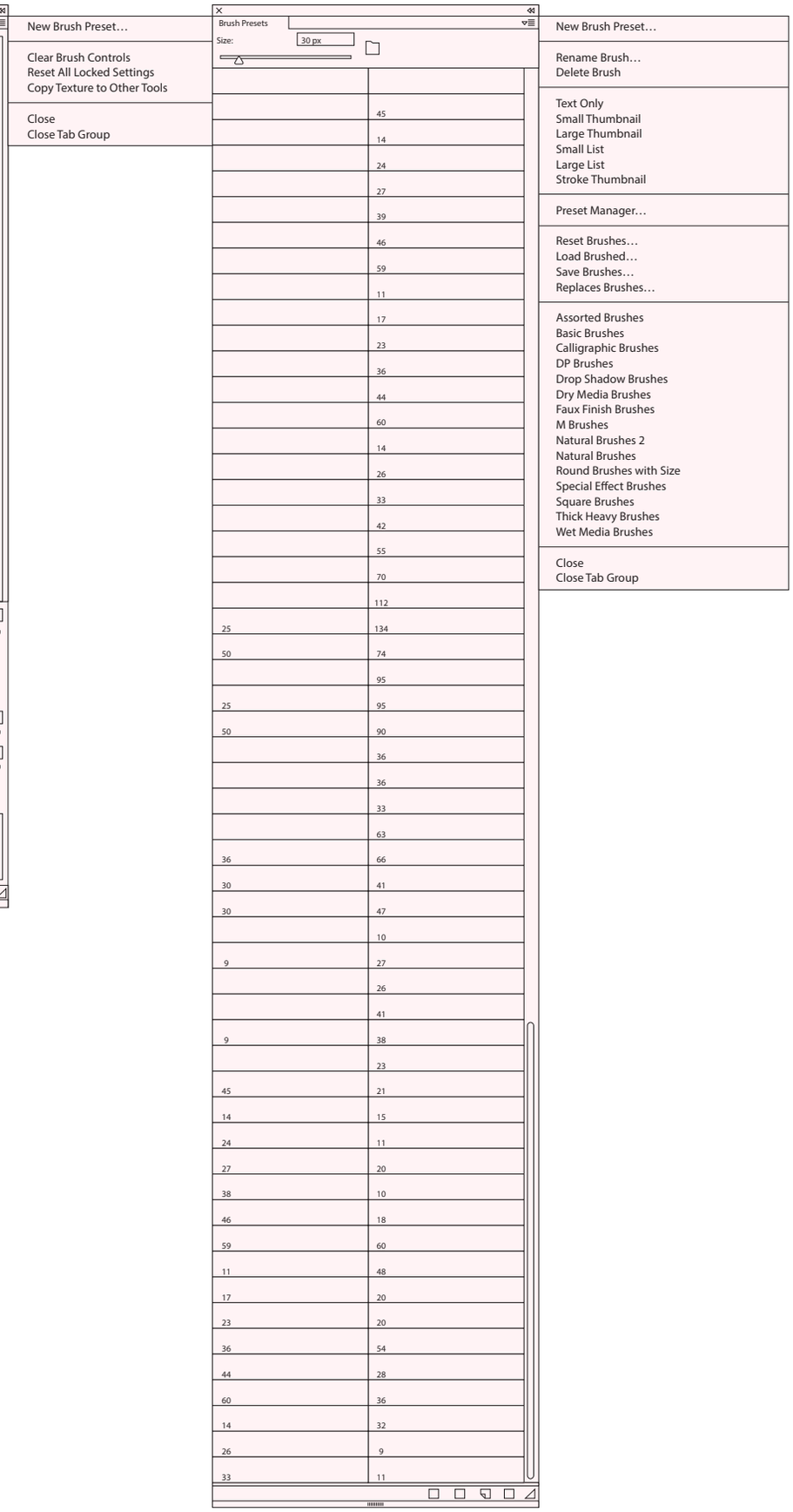
The next Syria map published by Van Linge, seven months later in January 2014, is significantly different.[50] This new map has much more detail, including both area and city information in a more extensive and nuanced legend and, unlike the 2013 map, featuring a map key, a title ('the situation in Syria') and information about the author: Van Linge's name and Twitter handle @arabthomness (in 2018 changed to @ThomasVLinge). Between 18 January 2014 and 5 September 2018, Van Linge published sixty-five maps of Syria on Twitter, initially every fortnight

31 Van Linge, 'IMPORTANT: map about the current situation in #syria'.
32 Ray, '8 Deadliest Wars of the 21st Century'.
33 'Thomas van Linge (20) brengt conflict in het Midden-Oosten in kaart'.
34 Koens, 'Deze 19-jarige Amsterdammer maakt kaarten van conflict Syrië.'
35 Ricciardelli, 'This Teenager Maps the Syrian War from His Bedroom'.
36 Westcott, 'The High School Student who Maps ISIS's Lightning-Quick Advance'.
37 '18-jarige kaartenmaker verovert de wereld'.
38 Status on 11 August 2019: Thomas van Linge (@ThomasVLinge) has sent 42,500 Tweets since joining Twitter in January 2013. As a comparison, American president Donald Trump (@realDonaldTrump) sent 43,400 tweets, American media personality Kim Kardashian West (@KimKardashian) sent 29,800 tweets and American singer Katy Perry (@katyperry), who has the most followed Twitter account in the world, sent out 10,000 Tweets. All three joined Twitter in early 2009, four years before Van Linge started using the message platform. Twitter accounts @ThomasVLinge, @realDonaldTrump, @KimKardashian, @katyperry, accessed 11.08.2019.
39 'Thomas van Linge'.
40 Egberts, '18-jarige Amsterdammer brengt feilloos Syrische strijdgroepen in kaart'.
41 Kuntz, 'The Dutch Teen Who Maps the Jihadists'.
42 Westcott, 'The High School Student Who Maps ISIS's Lightning-Quick Advance'.
43 'Hoorzitting/rondetafelgesprek Nederlandse steun aan gewapende Syrische oppositie'.
44 Keultjes, 'Schone handen houden was onmogelijk in Syrië'.
45 'Deze Nederlander van 20 volgt Islamitische Staat op de voet'.
46 Twitter profile Thomas van Linge (@ThomasVLinge).
47 'A 19 ans, il est le meilleur cartographe du conflit syrien'.
48 'Thomas van Linge'.
49 De Weerd en Van Houtum, 'Waarom je de macht van Islamitische Staat nooit in één kaart kunt vatten'.
50 'The situation in Syria', map posted on Twitter (@ThomasVLinge), 18 January 2014.

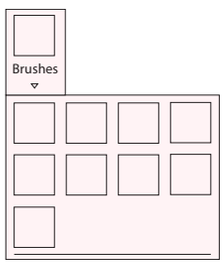
Brush

Adobe Photoshop





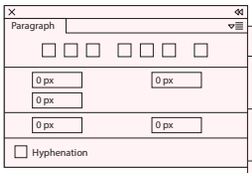
Microsoft Paint



Comparison between the capabilities of the graphics software Microsoft Paint, used by Thomas van Linge, and Adobe Photoshop, the comparable tool used by specialists. Several functions of the tools, such as brushes, colours or lines, are compared by displaying the menus of the two softwares side by side. The extensive possibilities of Photoshop are striking, although it must be said that one seldom uses, or knows, all the possibilities.

Type setting

Adobe Photoshop



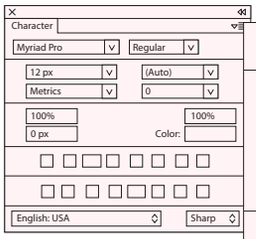
Roman Hanging Punctuation

Justification…
Hyphenation…

Single-line Composer
Every-line Composer

Reset Paragraph

Close
Close Tab Group



Change Text Orientation
Standard Vertical Roman Alignment

OpenType ▷
Faux Bold
Faux Italic
All Caps
Small Caps
Superscript
Subscript

Standard Ligatures
Contextual Alternates
Discretionary Ligatures
Swash
Old style
Stylistic Alternates
Titling Alternates
Ornaments
Ordinals
Fractions
Justification Alternates

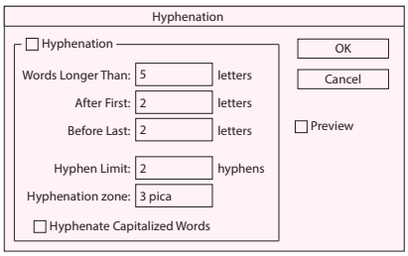
Underline
Strikethrough

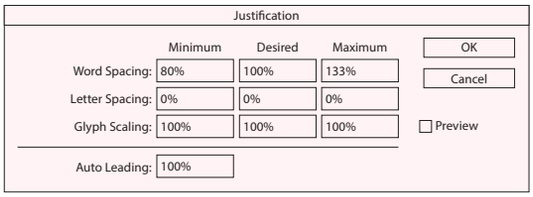
Fractionnal Widths
System Layout

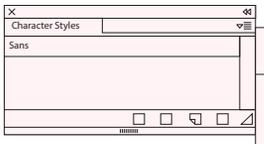
No Break

Reset Character

Close
Close Tab Group





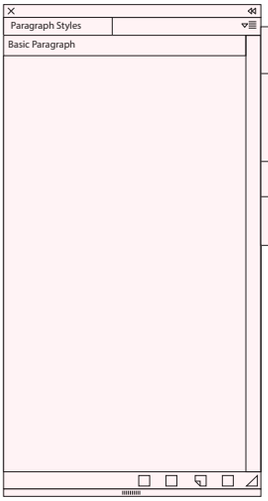


New Character Style
Style Options…

Duplicate Style
Delete Style
Redefine Style
Load Character Styles…

Clear Override

Close
Close Tab Group

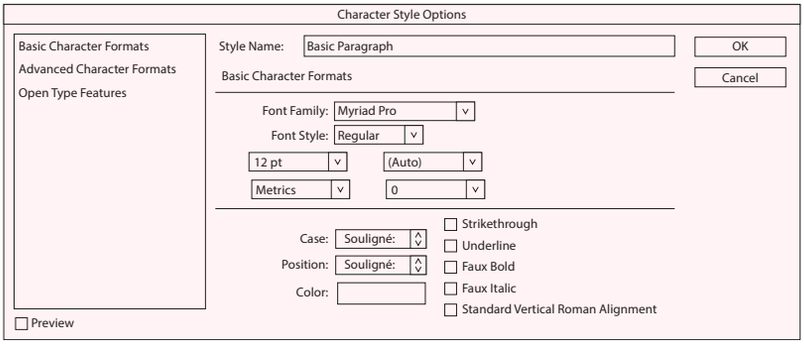


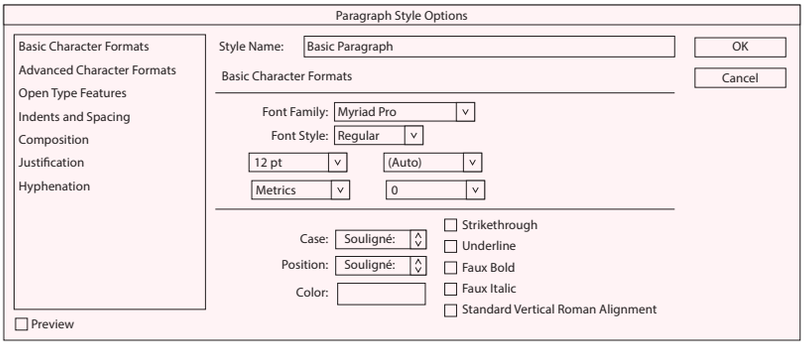
New Paragraph Style
Style Options…

Duplicate Style
Delete Style
Redefine Style
Load Paragraph Styles…

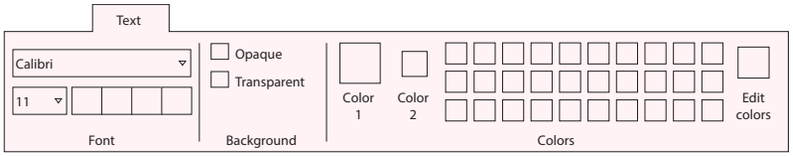
Clear Override

Close
Close Tab Group





Microsoft Paint



but later less frequently, all following the same design, with the exception of a few small improvements. For example, the maps published from June 2014 onwards use a legend that includes a second lighter shade to identify areas with a lower population density.[51] The lighter colour is used for deserts and less densely populated areas, the darker and brighter colours are used for the more densely populated northern edge and western part of the country, where Syria's largest cities Aleppo, Damascus and Homs are situated as well as the zone around the River Euphrates that crosses the country diagonally. Another change is the terminology used in the map's legend. The category 'Kurds', in reference to the stateless ethnic group, becomes 'Rojava'[52] on the map of 1 January 2015, the name for the autonomous region in north-eastern Syria, to be changed on 20 February 2017 into 'Federation Forces',[53] following the renaming of the region to Democratic Federation of Northern Syria by the Syrian Democratic Council in Rmelan in late December 2016. Comparing one map with the next on Van Linge's Twitter feed is reading the mapmaker's 'internal debate', in which changes in the political situation or other insights that informed the cartographic design can be observed.

I already mentioned that the embedding of a map in a public debate accentuates its post-representational aspects. When it is shared, distributed and becomes part of a conversation, a map becomes processual. In the case of 'the situation in Syria' map, four processual debates can be identified. First, there is the Twitter feed, which is Van Linge's main source of communication. The many Tweets, Retweets and Twitter Threads in Van Linge's feed provide context to the map. Simultaneously, it is a source of input, a platform for discussion and a means to give accountability. The second debate is the internal one as described above, in which the earlier editions of the map remain available for comparison to reveal the contemplations of the producer. The third debate is Thomas van Linge's public appearances outside his Twitter feed, such as giving interviews about his maps and talking about his methods and motivation. The fourth debate is the visible traces on the map of earlier versions. Of the four, this debate is the hardest to discern and also one that some might not opt to include, but to me it is an important one, as I will explain below.

Whereas nowadays most maps are made using vector graphics editors, 'the situation in Syria' map is produced with a pixel graphics editor. I will elaborate later on the exact tools Van Linge uses and why that is relevant, for now it is important that the difference between a pixel- and vector-based graphic is that the former is built up of many small squares that when zoomed in look jagged, pixelated, and the latter are defined in terms of precise points connected by mathematically defined lines and curves that remain smooth even when zoomed in very closely. A popular pixel-graphics editor is Adobe Photoshop that is used to edit, to 'photoshop', raster based imagery like photographs. Unlike pixel-based images, vector-based illustrations are infinitely scalable. This format is often used for typefaces, page layouts and architectural drawings. The main difference between the two types of tools in cartographic production is that maps made using a vector graphics editor can be more precise and their use more diverse in terms of the size in which they are presented, as their information is scalable without a loss of graphic quality.

One of the tools used to edit 'the situation in Syria' map, I presume, is a so-called Paint Bucket tool. This tool fills a selected area with a colour. Depending on the settings, it can either permeate an entire field or ignore certain elements, like a

text. This ignoring is achieved by specifying a certain tolerance of colour values in the settings. If the tolerance is set to 0, only one specific colour value will be filled in the selected area. The higher the tolerance, the more pixels will be covered. A text in a pixel-based image does not only consist of pixels in a single colour, but also of several shades of that colour to give the impression of smooth curves, rather than a hard jagged outline. If a black text is placed on a red background, the pixel editor will create the appearance of soft curves by making the pixels on the edge of the letters in a colour value between black and red. If the background colour is then adjusted to grey without using the correct paint bucket settings, the black text retains some dark-red pixels around the letters. These traces are clearly discernible when viewed on a pixel level, but in a normal viewing setting they are only slightly visible. Still, on Van Linge's Syria map, in areas that saw many changes during the civil war, the traces are a visual clue of eventful times.

Take, for instance, the city of Palmyra. In a two-year period it was first ruled by the loyalists of the Assad regime, then controlled by Islamic State, only to return to loyalist rule. On the map of 20 February 2017, the word Palmyra has a red aura, set against a light-grey background indicating the control of the Islamic State. This trace of the red background colour still indicates the former control of the area by the Assad regime.[54] The red aura is also visible on the map of 1 June 2014, this time against a pink background.[55] Previously, the background around Palmyra had been coloured bright red, but from this map onwards Van Linge makes a distinction between low- and high-density areas: sparsely populated areas are shown in a lighter shade; densely populated areas have a darker shade. The word Palmyra, while referring to a populous city, is placed on the map below a big dot in the empty dessert area. The red aura that in 2017 is a trace of a previous regime, is a trace of a different cartographic approach in 2014.

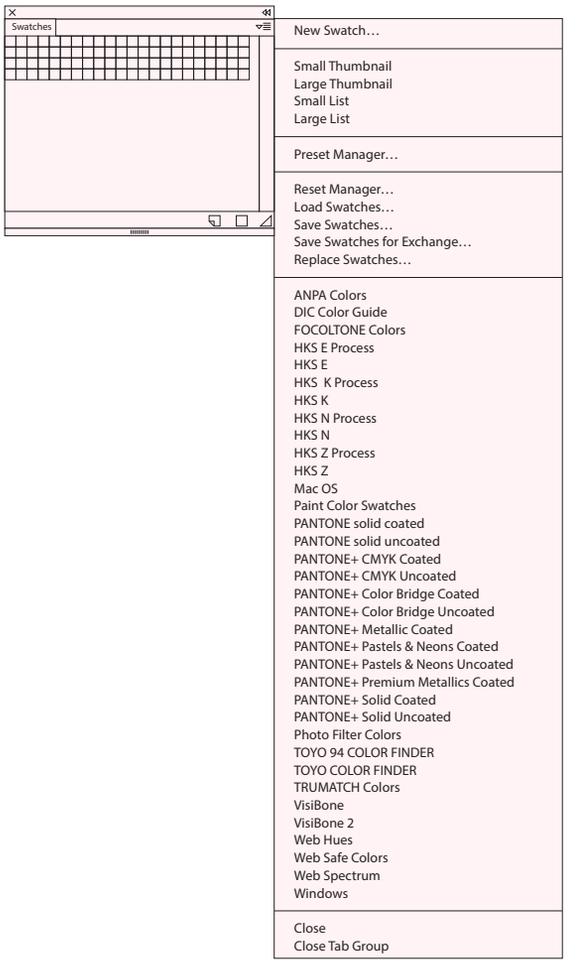
To me, these traces constitute a fourth processual debate in 'the situation in Syria' map. The digital residue of previous editions of the map is a visual cue of an ongoing negotiation between the map, the circumstances that it depicts, the cartographic language in which this is done and the technology that is used to produce it. It also provides an insight in the learning process of the mapmaker. Van Linge introduces new elements on the map as he gains a better understanding of the situation on the ground and, perhaps, advances his cartographic knowledge. The great strength of the debate of traces is that, unlike the other public debates, it reveals itself in a single map. But only for those who are willing and capable to dissect it on such a fundamental level. The Twitter debate and the internal debate disclose themselves as a sequence, a follow-up of messages or a comparison of consecutive editions of the map that do not show up if one studies an individual image.

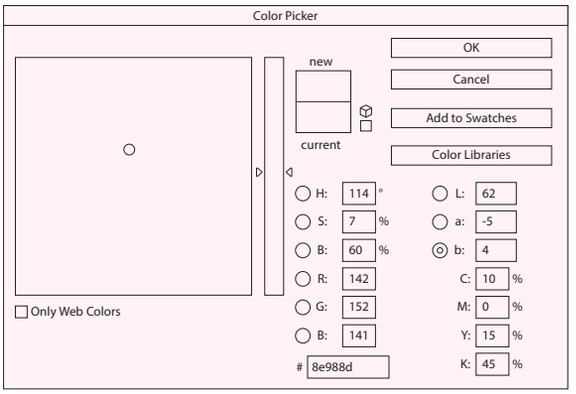
One could argue that traces of previous versions in 'the situation in Syria' map are digital imperfections resulting from a lack of skills of the mapmaker or the use of an inadequate tool. They would probably not be present if Van Linge had more knowledge and experience with graphic production. Van Linge's statement in an interview with American news magazine and website *Newsweek* that he is 'not very sophisticated with computers' confirms this.[56] I see the traces as an unintentional quality that provide the map with an additional layer of information. More generally, to me such imperfections grant an air of sincerity to the graphic

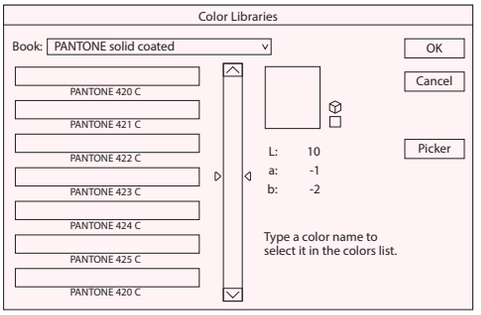
51 Ibid., 1 June 2014.
52 Ibid., 1 January 2015.
53 Ibid., 20 February 2017.
54 Ibid., 20 February 2017.
55 Ibid., 1 June 2014.
56 Westcott, 'The High School Student who Maps ISIS's Lightning-Quick Advance'.

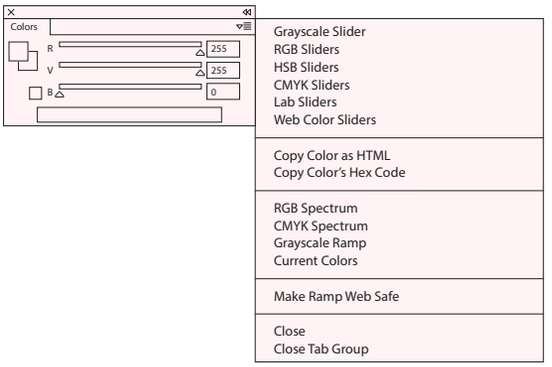
Colour

Adobe Photoshop

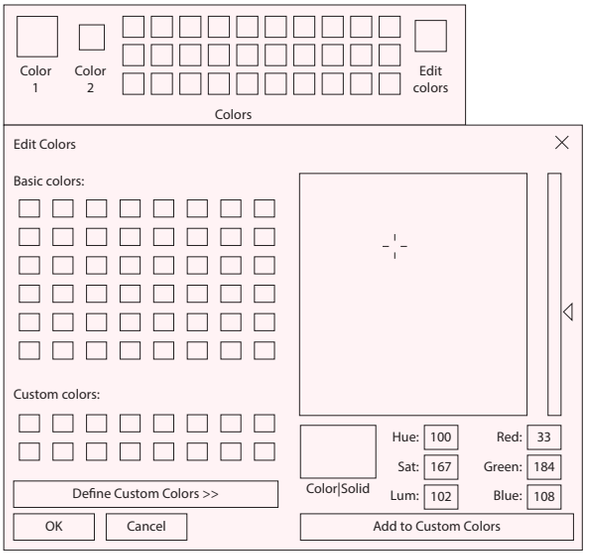






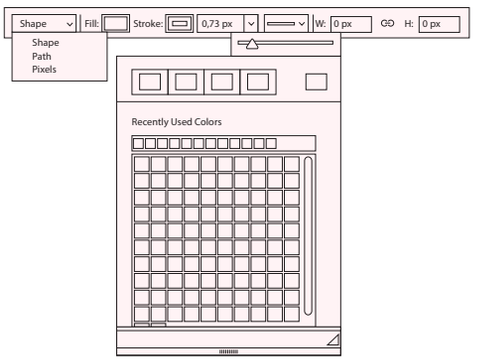


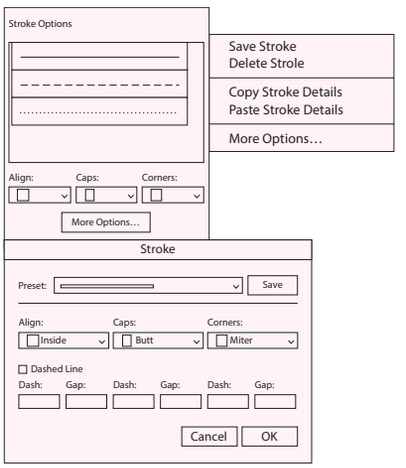
Microsoft Paint



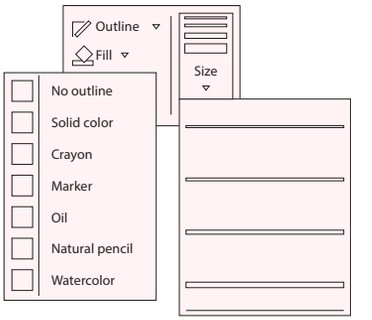
Lines

Adobe Photoshop



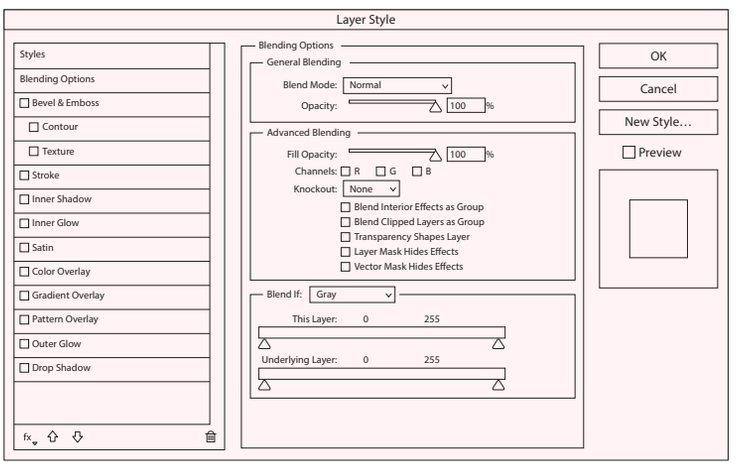


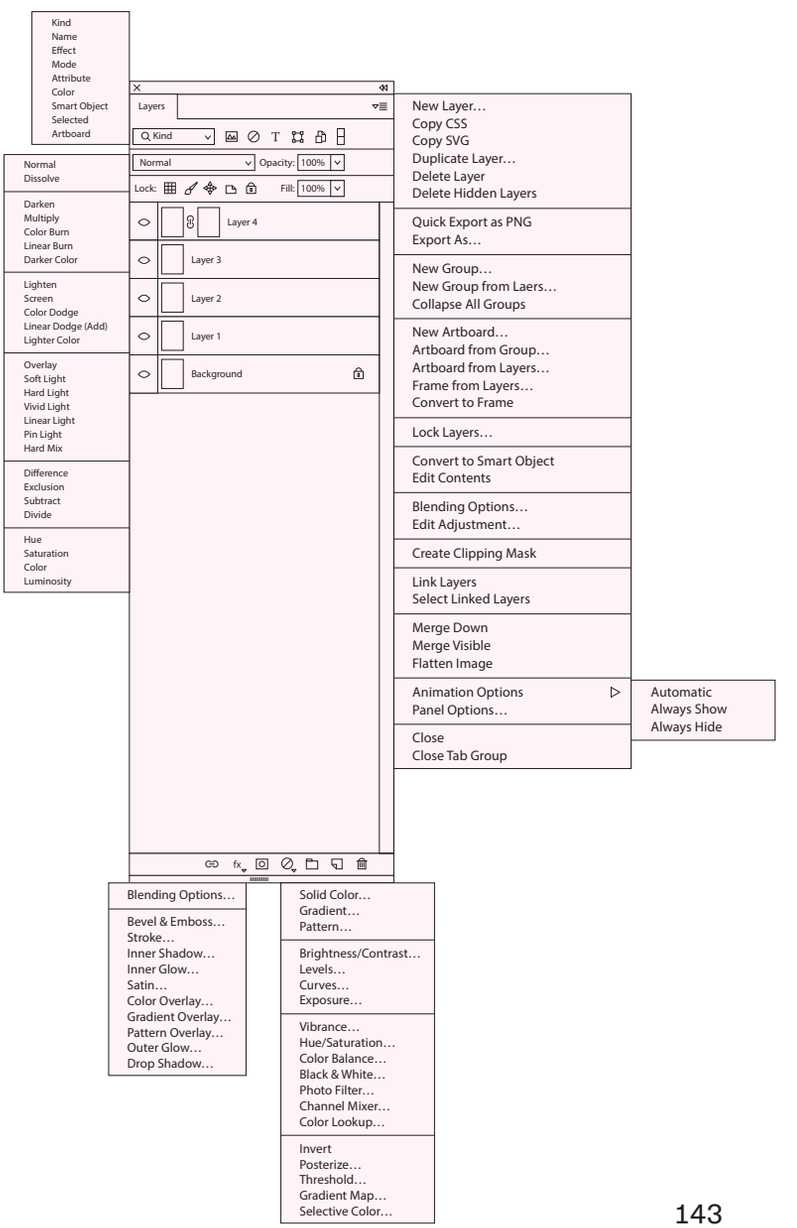
Microsoft Paint



Layers

Adobe Photoshop





Microsoft Paint has no layer option

product. As if with the lack of skills, also the power to rhetorically manipulate and influence the user is absent. Besides, any shortcomings of design competence do not prevent the mapmaker from adequately expressing her intentions. I agree with Offenhuber when he concludes that the lack of refinement and raw appearance of the work of amateur conflict mapmakers is 'not unintentional; it follows a visual logic that serves the purpose of presenting evidence'.[57]

With the map tightly cropped around the country, the title positioned in the top centre and the legend at the bottom, both set in a serif typeface, light blue for water and bright colours for the different parties that control the country, 'the situation in Syria' map has the appearance of traditional cartography. Van Linge's map differs from a printed atlas in that it is embedded in several public debates, it is shared, distributed and part of an ongoing dialogue and open to being questioned. Another difference is that Van Linge's maps contain traces of previous versions that give the discourse a visual presence on the map, albeit hardly perceptible. Both aspects highlight and emphasize the post-representational processual nature of the map. In addition to these two, there is a third aspect in which 'the situation in Syria' map distinguishes itself from representational cartography and that is how it is produced.

Van Linge's maps are not made with a specialist tool, but by using software called Microsoft Paint, a pixel graphics editor with limited possibilities that is part of the Microsoft Windows operating system.[58] To better explain why this is an important aspect to consider, I will explain how graphics are produced in a professional context, how graphic designers are trained and why Van Linge's choice to use Microsoft Paint is undermining both of these.

Insurgency Tactics

In the past few years I conducted a series of workshops in Switzerland and the Netherlands entitled 'Atlas of Design Tools'.[59] The aim of the workshops was to investigate political, social, environmental and economic aspects of the design tools the participants were using in their daily practice. The critical inquiry resulted in research questions such as who created the tools, when and where they were invented and produced, what materials and means were used to produce them, under what conditions they were made, the costs of their production, the ownership of the technology behind them, and who it is that makes the profits. The outcome of the research, translated into visual formats like maps, timelines and diagrams, was collected into a single book at the end of the workshop: the atlas of design tools.

At the start of the workshops the participants were asked to list their most-used design tools. Out of more than one hundred participants, a large majority mentioned Adobe software as the technology they favoured. The top ten at each workshop consistently contained, and often in the upper positions, Adobe Photoshop, Adobe Illustrator and Adobe Indesign, respectively the pixel graphics editor, the vector graphics editor and desktop publishing and typesetting application of American software company Adobe. The applications listed above are part of the Adobe Creative Cloud, a set of software tools aimed at graphic design,

video editing, web development and photography that is the industry standard in many creative fields.

Two notions coming from the workshops' critical investigations into Adobe software are worth mentioning. First, the dominance of Adobe in the field of creative tools. There are other options for Adobe software, both commercial and open-source, but these are few and their use is limited. Furthermore, the alternatives concern single software tools in the Creative Cloud package. But I would claim that we should not look at the individual tools but at the package as a whole. The set of Adobe softwares offers the possibility to seamlessly transport designed elements from one application to the next. To Russian/American author and scholar Lev Manovich, this crossing over from one tool and medium to the next is a typical practice of what he calls the 'software era'.[60] Working on a project, a designer will use several softwares and take a design element and work on it in a variety of tools. Manovich states that '"import", "export" and related functions and commands … are more important than the individual operations [the] programmes offer'.[61] In other words, when dealing with graphics and video editing tools we should not consider the individual tool, but the group of tools as a whole. On that level there is no alternative for the Creative Cloud, there is no set of softwares that is so complete and offers such an easy exchange between tools as Adobe does. Considering all this, the earlier mentioned term 'industry standard' feels like an understatement to describe the position of Adobe's software; 'monopoly' would be a more appropriate term.

A second notion that came from the workshops is a critique of Adobe's economic model. Since 2014, Adobe's software tools are available in subscription format only. The monthly costs amount to around €36 for an individual tool like Adobe Photoshop, or €90 for the full set of tools in Adobe Creative Cloud, meaning that if one were only using the software to make one map per two weeks, like Thomas van Linge does, the costs would amount to €18 per map if only Photoshop is used or €45 per map if a combination of tools is utilized.[62] Adobe's economic model forces the producers of graphics to work in a specific way. The cost of the tool is only justified if it is used in a specialized practice.

In my own graphic design practice I also notice the dominance of Adobe. Certain publishers or printers only work with Adobe software. When working with these parties, one is obliged as a designer to use these specific tools. I also experience the dominance of the American software company in another way.

A few years ago I started to research the current state of the field of graphic design. In theory and writings about the discipline, I could not find descriptions of the aspects I was experiencing in my practice, like the shifting position of the designer. So I started researching it myself. This dissertation is one example, the workshops I described above another. In yet another part of the research, an investigation done in my studio, we looked at the applications we receive from students who are looking for an internship. We looked at the CVs and portfolios of around two hundred applicants in the years 2016 and 2017 to study the education and first professional activities of a new generation of graphic designers. The applications came from all over the world, the majority from Europe, with the highest number of applicants coming from France. Of the applicants who listed skills on their CV, all were proficient in the Adobe Creative Cloud tools. Only a handful

57 Dietmar Offenhuber, 'Maps of Daesh: The Cartographic Warfare Surrounding Insurgent Statehood'.

58 In almost all articles and news reports about Van Linge's maps, this fact is featured prominently. A contrast is created between on the one hand, a teenager living with his parents, 3,000 km from Syria, making maps using Microsoft Paint as opposed to war violence, the precision of the maps and their usage by prominent international news media.

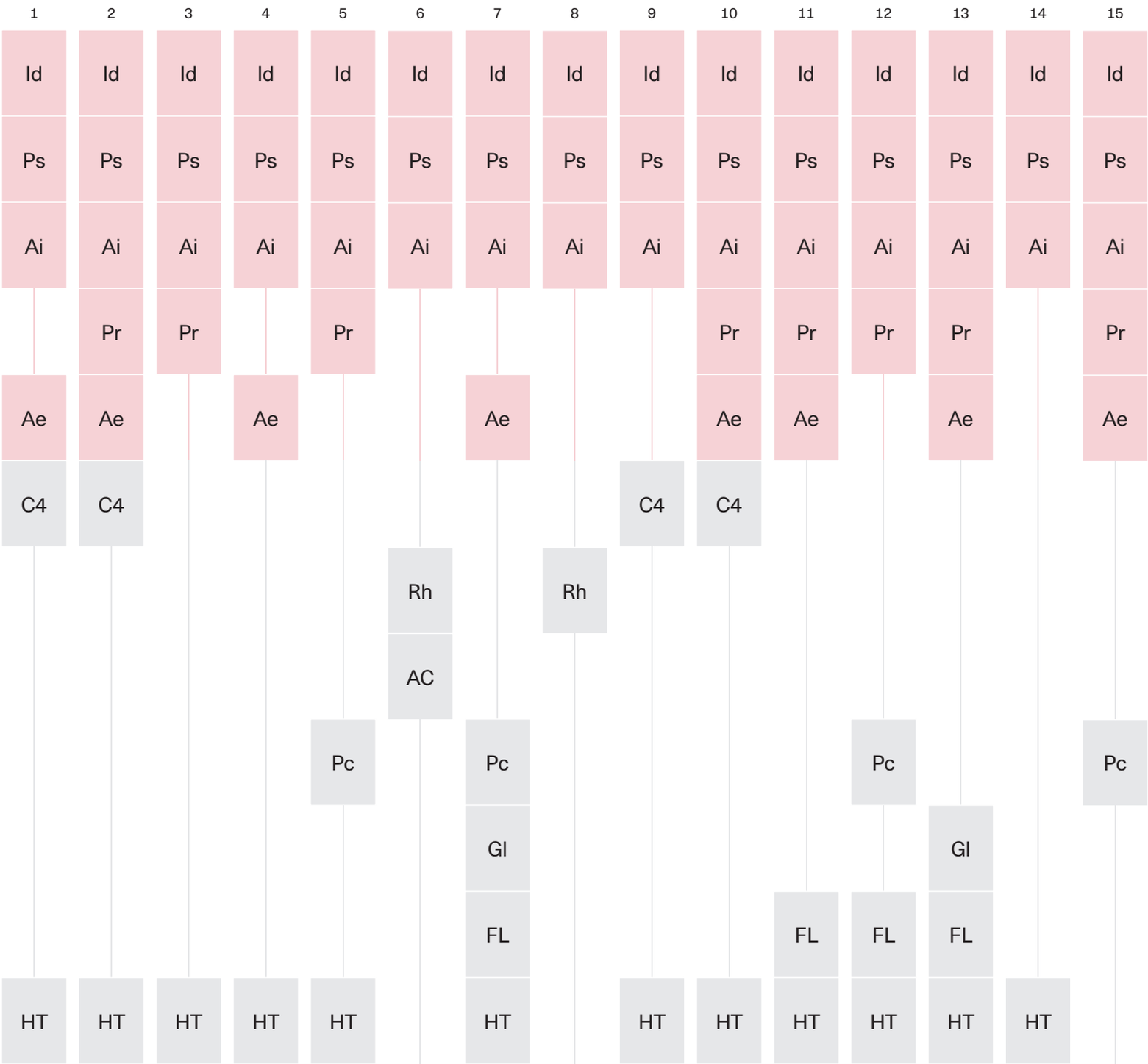
59 The workshops took place at departments of graphic design, both at bachelor and master level, of École Cantonale d'art de Lausanne (2016), Zurich University of the Arts (2017), Design Academy Eindhoven (2018) and Bern University of the Arts (2018). The supervision of all but one of the workshops was done in collaboration with Dimitri Jeannottat.

60 Manovich *Software Takes Command.*

61 Ibid., 306.

62 'Ontdek de Creative Cloud-ervaring'.

1 California Institute of the Arts, Valencia
2 Rhode Island School of Design, Providence
3 Universidade Europeia, Lisboa
4 Escola Superior de Artes e Design, Porto
5 Glasgow School of Art, Glasgow
6 Leeds Beckett University, Leeds
7 Central Saint Martins, London
8 Kingston University, London
9 Escuela Universitaria de Diseño et Ingeniería de Barcelona, Barcelona
10 École de Communication Visuelle, Nantes
11 Atelier de Sèvres, Paris
12 École Estienne, Paris
13 École de Communication Visuelle, Paris
14 Institut Supérieur de Communication et de Publicité, Paris
15 École nationale supérieure des Arts Décoratifs, Paris

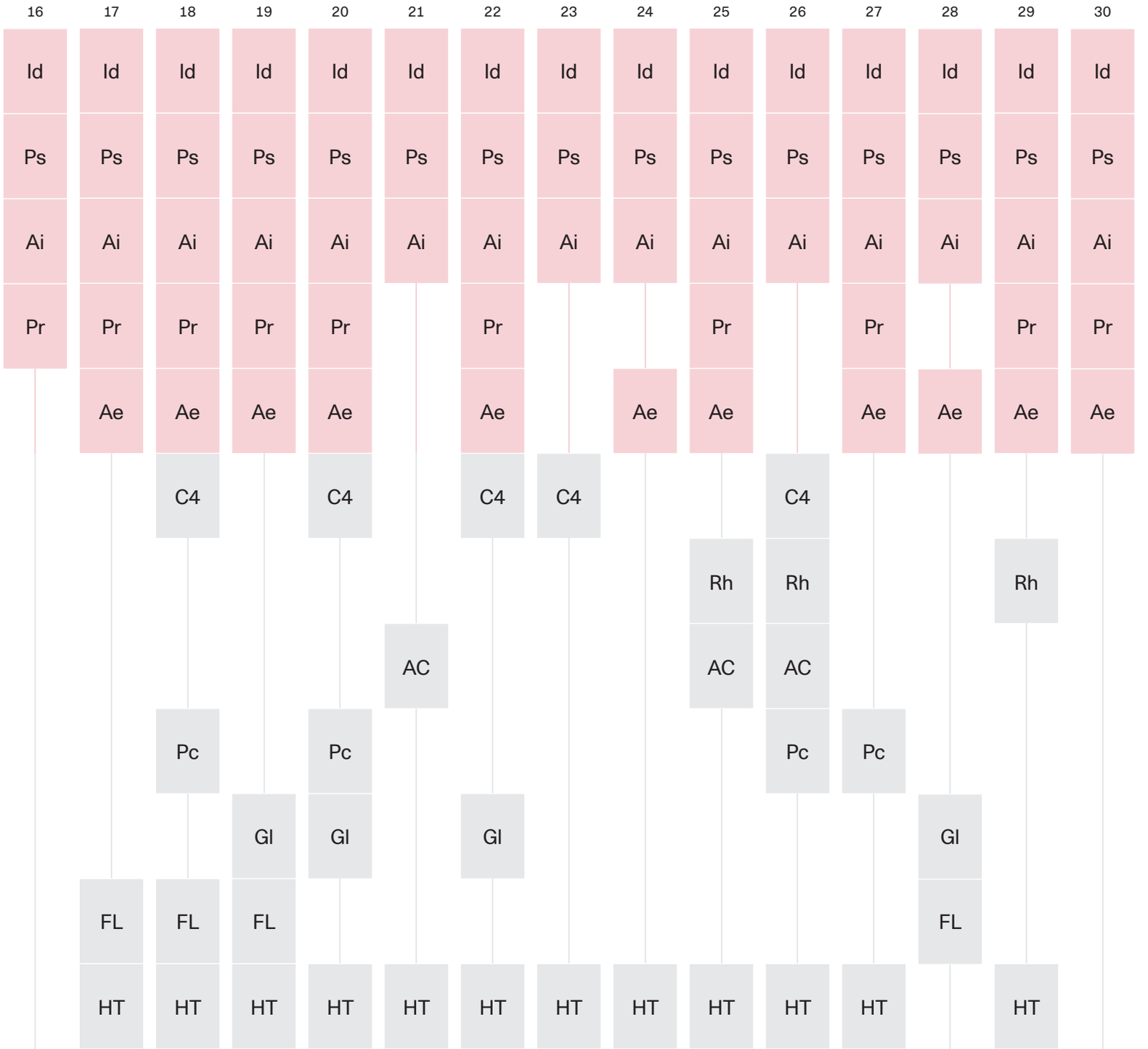


Id Adobe InDesign is a layout and page design software for print and digital media developed by Adobe Inc. (US) and released in 1999.
Ps Adobe Photoshop is an imaging and graphic design software developed by Adobe Inc. (US) and released in 1990.
Ai Adobe Illustrator is a vector graphics software developed by Adobe Inc. (US) and released in 1987.
Pr Adobe Premiere is a video editing software for film, TV, and the web developed by Adobe Inc. (US) and released in 1991.
Ae Adobe After Effects is a motion graphics and visual effects software developed by Adobe Inc. (US) and released in 1994.

Adobe
Other developer

C4 Cinema 4D is a 3D modeling, animation, motion graphic and rendering software developed by MAXON (Germany) and released in 1990.
Rh Rhinoceros is a 3D computer-aided design modeling software developed by Robert McNeel & Associates (US) and released in 1994/1998.
AC AutoCad is a computer-aided design and drafting software developed by Autodesk Inc. (US) and released in 1982.
Pc Processing is an open-source graphical library and integrated development environement developed by Casey Reas and Ben Fry (US) in 2001.
Gl Glyphs is a font editor developed by Georg Seifert (Germany) and released in 2011.
FL FontLab is a font editor developed by SoftUnion Ltd (Russia)/Pyrus North America Ltd. (US) and released in 1993.
HT HTML is the standard markup language for documents designed to be displayed in a web browser, developed by Tim Berners-Lee (UK) in 1992.

16 École Supérieure d'Arts Appliqués de Bourgogne, Nevers
17 École de Condé, Lyon
18 Axe Sud, Marseille
19 Koninklijke Academie voor Schone Kunsten, Ghent
20 Koninklijke Academie voor Beeldende Kunst, Den Haag
21 Willeim de Kooning Academy, Rotterdam
22 Gerrit Rietveld Academie, Amsterdam
23 ArtEZ Hogeschool voor de Kunsten, Arnhem
24 École Cantonale d'Art de Lausanne, Lausanne
25 Scuola Universitaria professionale della Svizzera italiana, Lugano
26 Milano Politecnico, Milano
27 Università Iuav di Venezia San Marino
28 Academy of Fine Arts and Design, Bratislava
29 Academy of Fine Arts, Cracow
30 British Higher School of Art and Design, Moscow



Overview of the software skills listed in the curricula vitae of students who applied for an internship at graphic design studio SJG, sorted by school. These data are the result of a study of about 200 internship applications in the years 2016 and 2017. The applications came from all over the world, the majority from Europe, with the highest number of applicants coming from France. Of the applicants who listed skills on their CV, all were proficient in the Adobe Creative Cloud tools.

mastered other graphics editors. These new designers almost exclusively mastered Adobe software. So even if I am not working with publishers and printers, if I was working on self-initiated projects that I would self-produce then I would still be dependent on Adobe tools if I wanted to collaborate with other designers.

The predominant position of one software package in a field is not limited to Adobe Creative Cloud in the field of graphic production. Think for instance of the role of Microsoft Office in the academic field: Microsoft Word to write papers or research proposals, Microsoft PowerPoint to give presentations at conferences or in education, and Microsoft Excel to do quantitative research, make a diagram, or keep a budget. The point I want to make is that the dominance of a tool in a discipline leads to a certain specialized practice. Some have even claimed that software tools also have an impact on the output. American statistician, scholar and writer on information design Edward R. Tufte has argued that Microsoft Powerpoint forces users to create presentations that use 'an intensely hierarchical single-path structure as the model for organizing every type of content' that 'turns information into a sales pitch and presenters into marketers'.[63]

Bearing the above in mind, it is clear that not using the dominant tool, the seemingly only tool in a field, is an act of rebellion. That is at least how I see Thomas van Linge's use of Microsoft Paint to make a map. Van Linge found a way to escape the default. Not by the appropriation of a tool, as many designers strive for, but by denying it and instead using a 'non-tool'. In doing so, he developed a graphics editing practice that escapes the model that the 'industry standard' seems to demand.

Much more can be said on the subject of software. It is a topic that is highly relevant and explored in depth in the field of Software Studies by scholars like the aforementioned Lev Manovich and Matthew Fuller, writer, artist and Professor of Cultural Studies at Goldsmiths University of London. In the context of this research I have chosen to focus on the impact of software on practice. Tools rooted in a certain production model demand a certain type of specialized practice and a certain type of specialized education of its practitioners. They also seem to foster certain kinds of outcomes.

In Chapter 2, I used the military term 'friendly fire' to describe the impact of the democratization of design tools on the position of the designer, an attack by a force on one's own or neutral units while attempting to attack the enemy. The digitization of the production process empowered the designer, but also made it possible for outsiders to enter the field and subsequently render the designer obsolete. In the digital age non-specialists have access to specialist tools. In the case of Thomas van Linge's practice, there is a slight difference as he uses non-specialist tools to produce his work. To describe Van Linge's practice I would like to use another military concept: insurgency tactics. In military terms these are the actions of rebels against an established government, often involving improvised and homemade weaponry. To stay in the military analogy, if Adobe Creative Cloud is a state-of-the-art fighter jet, then Microsoft Paint is a Molotov cocktail or baseball bat: inexpensive, employable without training, not very subtle, but highly effective.

Postscript

Three years after the publication of Tomás López's *Atlas geográfico de España*, the Peninsular War started. In this military conflict between Napoleon Bonaparte's French empire and Bourbon Spain assisted by the United Kingdom and Portugal, the French occupied Spain.[64] The most recent geographic source available was López's atlas. But soon both Napoleon's and Wellington's armies found out that it lacked precision and started making their own maps of Spain.[65] The errors were due to the non-topographical surveying method López had used. He had learned the desk cartography method from one of the eighteenth century's most prestigious cartographers, Frenchman Jean Baptiste Bourguignon d'Anville (1697–1782), but López applied it with less rigour and did not give precise instructions to the village priests who carried out the surveys. The use of the maps in a situation of conflict had exposed the flaws of López's expertise.

The quality of Thomas van Linge's maps established his reputation as a specialist. Not only on Syria, but more generally on reporting and mapping current wars and uprisings, in line with the various topics covered in his Twitter feed. While writing this text in August 2019, Van Linge, who is currently a political science student, is in Hong Kong reporting on the antiextradition bill protests for the news programme of Dutch broadcaster RTL.[66] Shifting from the mapmaking of situations to mapping conflicts, Thomas van Linge has become a specialist.

Although the above paragraphs might seem to suggest otherwise, the maps of the two Thomases are not that different. Both use people on the ground to gather data and map a site. Both compare a variety of sources to extract information and make a map. The specialist label that might distinguish one of the two seems arbitrary. What makes the difference is whether the map gains authority in its use.

Conclusion

This chapter looked into the practices of amateur conflict mapmakers, non-specialists who lack training, knowledge and skills but who instead have knowledge of, or access to, a site or are willing to make inexhaustible efforts to collect and compare data and convert it into a map. The work produced by these practices is more raw and unsophisticated than those of specialist practices, which gives their work an air of honesty; the absence of sophistication equals the absence of rhetorical manipulation.

What interests me about the work of amateur conflict mapmakers is that in a way they produce an anti-representational cartography. The premise of representational cartography is that the world can be objectively known and truthfully mapped. One of the aims of cartography, according to this approach, is to improve the effectiveness of a map. The design of a map, the relationship between a map's content and its graphic containers, should be carefully balanced. Amateur conflict mapmakers lack the skills, knowledge and perhaps even the interest to make the kind of sophisticated map that representational cartography strives for. Given the nature of their subject matter and the—mostly online—debates they are part

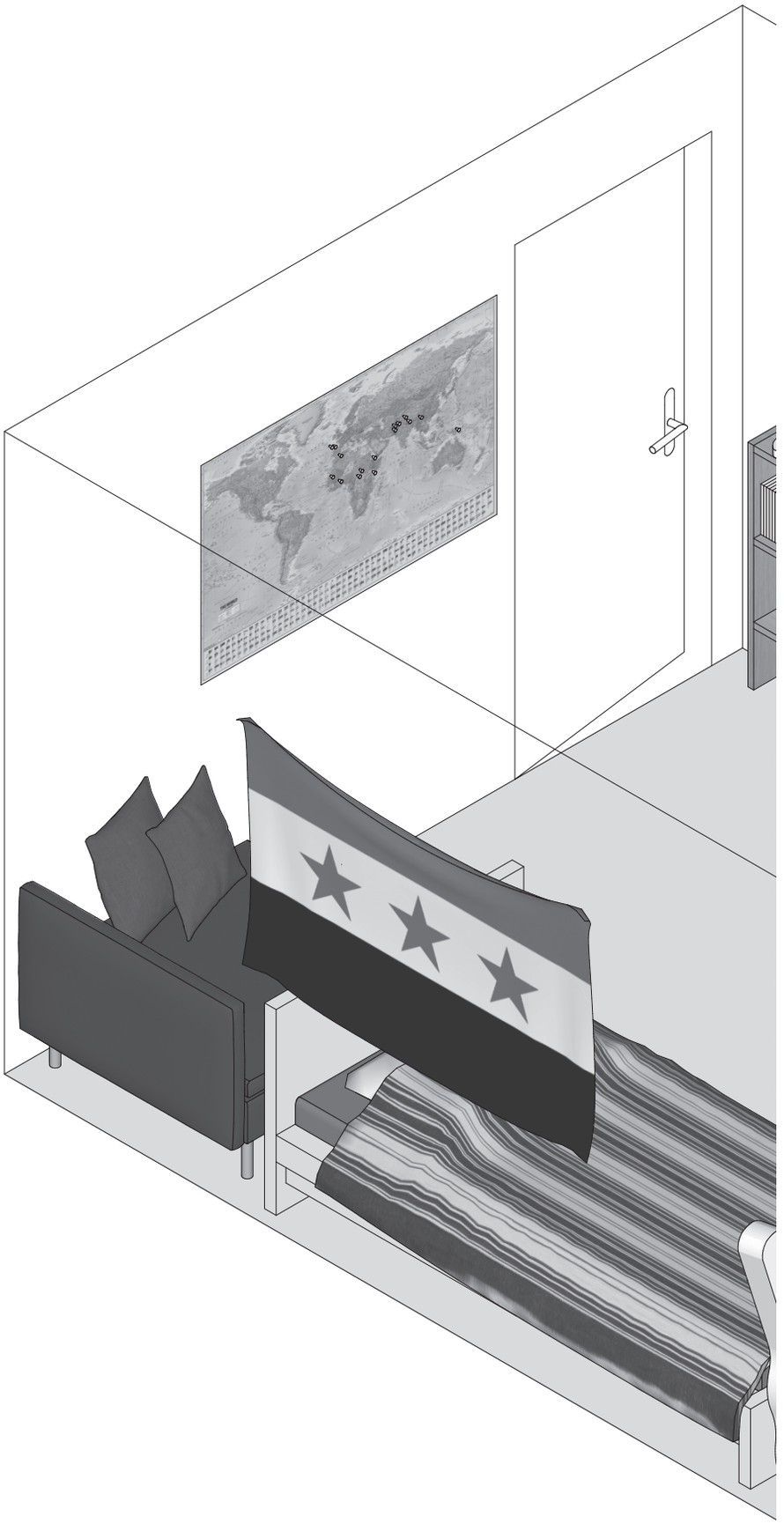
63 Tufte, *The Cognitive Style of PowerPoint*, 4.

64 Francisco Goya's famous painting *The Third of May 1808* (1814) depicts a key event of the Peninsular War: the uprising of citizens of Madrid against the French army.

65 San-Antonio-Gómez, Velilla and Manzano-Agugliaro, 'Tomás López's Geographic Atlas of Spain in the Peninsulan War: A Methodology for Determining Errors'.

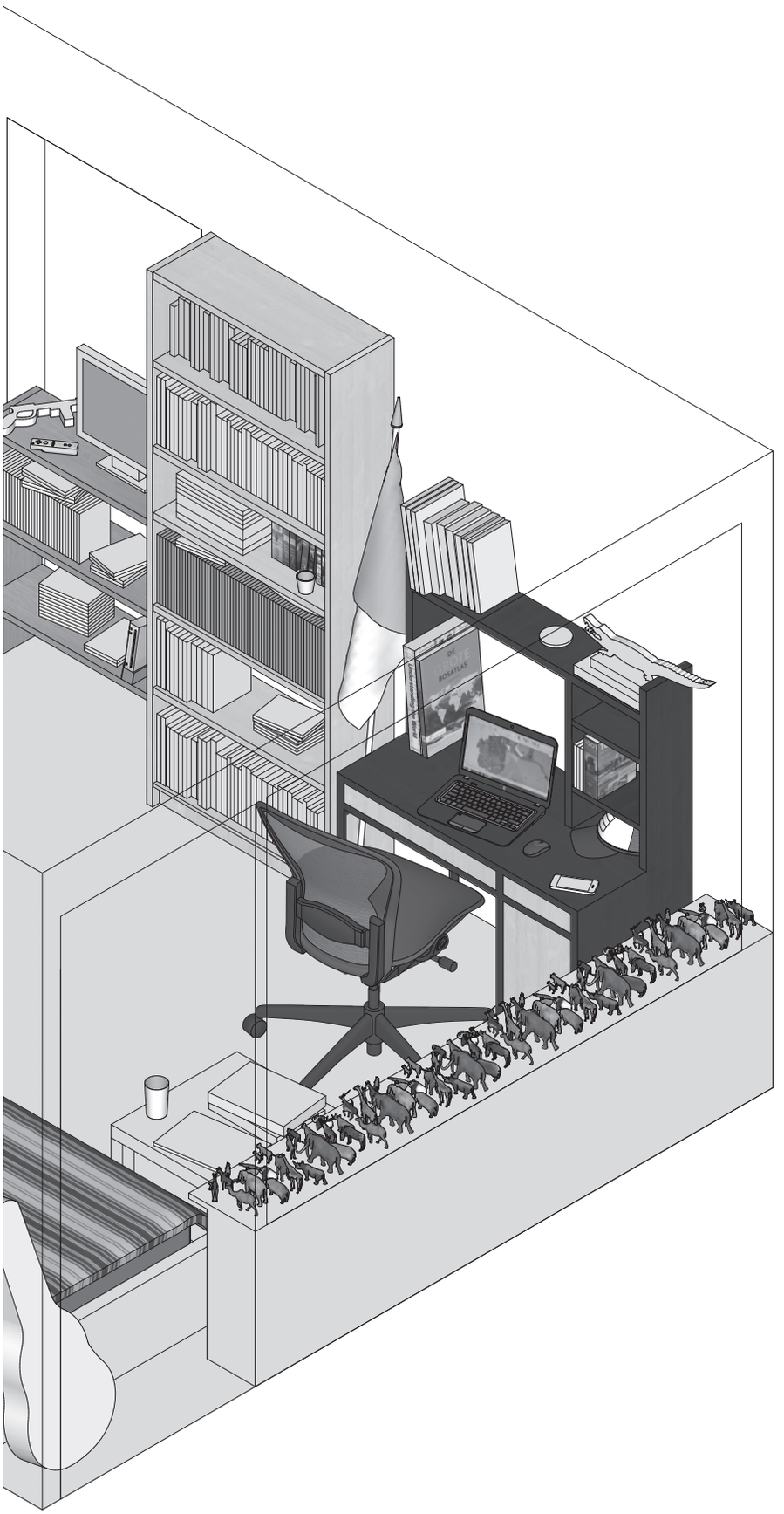
66 'Botsingen tussen politie en betogers op bezet vliegveld Hongkong'.

The Situation in Syria: Workplace



Thomas van Linge, Amsterdam

Sources: ‘18-jarige kaartenmaker verovert de wereld’; ‘A 19 ans, il est le meilleur cartographe du conflit syrien’; ‘Deze Nederlander van 20 volgt Islamitische Staat op de voet’; Koens, ‘Deze 19-jarige Amsterdammer maakt kaarten van conflict Syrië’; Ricciardelli, ‘This Teenager Maps the Syrian War from His Bedroom’.



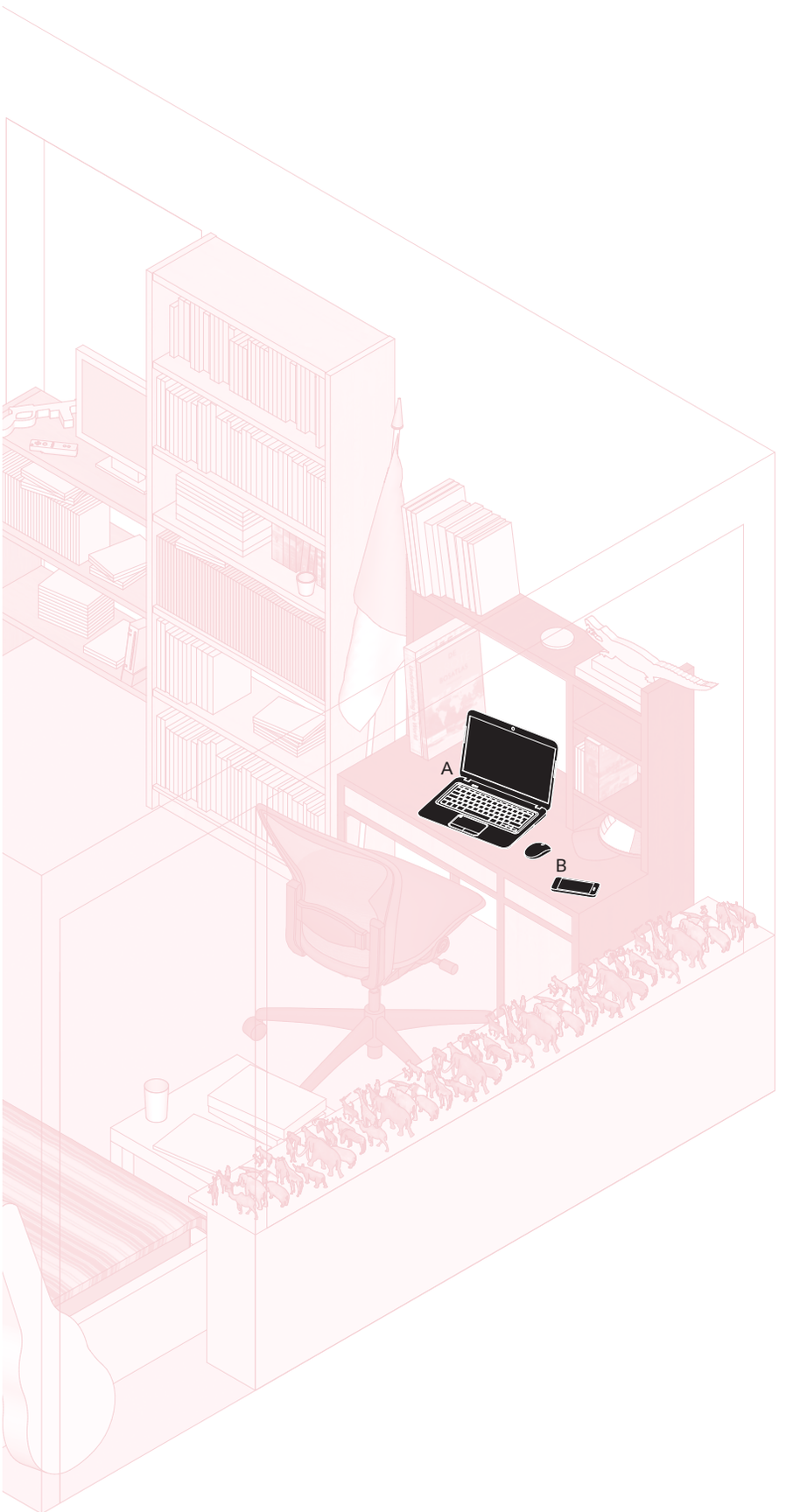
of, amateur conflict mapmakers put more emphasis on the process of unearthing data, on showing what otherwise would be hidden, than on the representation of information as an image, on mapmaking. Their maps are visibilizations, rather than visualizations. In other words, the work of amateur conflict mapmakers highlights the process of mapping rather than the act of mapmaking. The terms visualization and visibilization highlight the intentions of the mapmakers, rather than the actual use of the maps. Amateur conflict mapmaker Thomas van Linge's maps, for instance, are adopted as truthful representations by major news media.

The maps of amateur conflict mapmakers might lack certain visual qualities. Their work, however, has other merits, especially when approached from a post-representational perspective. In post-representational cartography a map is regarded as a process rather than as a product. The full process of creating, editing, producing, distributing and using is never finished. A map is reproduced again and again, every time a user engages with it. When considering the map as a process, it becomes important to look beyond the map as a graphic product, to how it is shared, distributed, whether it is part of an ongoing dialogue and is open to being questioned. In other words, not so much the visual strategies, but whether it is part of a public debate determines the accountability of the map. A map can be embedded in several debates. These can vary from open dialogues on social media where maps are shown amid their sources along with previous versions and discussions about claims made in the map, to more internalized debates that show the process and considerations of a mapmaker. Most of these public debates become apparent when comparing various maps, or looking at the map in the context of a conversation. There is also a discourse that shows up on the map itself. Digital residues of previous versions of the map leave a subtle trace on a map to constitute a public debate.

Another processual aspect that is not visible in their maps, but has a significant impact on the practice of amateur mapmakers, is how the work is produced. Rather than following developments in practices, tools seem to shape the practices in which they are used. Specialized software generates a specialized practice because of the economic model employed by software manufacturers, the demands of an industry that uses the software as an exchange format, and the curricula of educational institutes. By means of improvisation and the use of generic tools, amateurs may create different kinds of graphics editing practices not based on specialization. Specialized design practices can learn from non-specialists to adopt their strategies to reformulate one's practice, improvise, use non-specialist tools and engage one's work and oneself in public debates to 'walk and measure' the world.

Thomas van Linge, Amsterdam

Sources: ‘18-jarige kaartenmaker verovert de wereld’; ‘A 19 ans, il est le meilleur cartographe du conflit syrien’; ‘Deze Nederlander van 20 volgt Islamitische Staat op de voet’; Koens, ‘Deze 19-jarige Amsterdammer maakt kaarten van conflict Syrië’; Ricciardelli, ‘This Teenager Maps the Syrian War from His Bedroom’.



A Packard Bell Easynote TJ-65
B Samsung Galaxy S4