

The Power of Maps in Shaping Visions about the Arctic

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Maps have the ability to make abstract information visible and real to their audiences. They provide humans a way to conceptualize and understand places and issues that otherwise might seem both distant and abstract. This article argues that maps influence what issues are visible and knowable and what issues are silenced and disregarded, often giving prominence to dominant understandings. As such, maps help constitute what is considered politically possible in terms of governing problems such as climate change or pressing ahead with new policy initiatives pertaining to economic development. Specifically, this article seeks to understand the power of maps in the context of the Arctic region, where maps can be seen as central to constructing imaginaries and indirect experiences of the Arctic. I suggest that Arctic processes and possibilities are difficult to communicate to audiences, let alone imagined, without the use of maps. To illustrate the constitutive power of maps in the Arctic, I deconstruct a set of two maps depicting oil and gas potentials in the Arctic coming from a fact-sheet by the U. S. Geological Survey. The analysis focuses on the ways in which these maps enable and limit certain conceptualizations and visions of 'the Arctic' and politics within that region. I contend that maps are powerful because they shape generally held assumptions about the Arctic, often serving already dominant interests and visions about the future.

Maps are powerful

Maps provide a way for human beings to conceptualise and understand places and issues. They have the ability to make abstract information visible and real. In this way, maps influence what issues are visible and knowable to audiences and what issues are silenced or disregarded. In this way, they are sources of knowledge and shapers of assumptions about the world we live in, implicating hierarchical social relations in which human lives are situated. I argue that maps are central in creating particular points of departure from which the world and issues within it are understood and upon which political choices are made. Maps can, for example, set the conditions for how to understand seemingly far-away places such as the Arctic and how to deal with problems such as climate change. Yet, this role that maps have in setting the scene for understanding and action is rarely problematized in the study and practice of international politics or indeed in people's everyday lives. Hence, as Boria (2015: 144) argues, a map's ability to seemingly camouflage its political content makes it highly political, conditioning people's thoughts and actions without being questioned. Moreover, this unquestioned position of maps can produce dominating systems of

meaning from which political action is directed and legitimized (Shapiro, 1989). In this article, I highlight the constitutive power of maps and argue that maps can constitute political meaning-making, thinking, and acting in various ways that are relevant to the study of power and politics.

More specifically, I set out to understand the power of maps in the context of the Arctic region. According to Steinberg et al. (2015), the Arctic is an area particularly prone to be governed through imaginaries due to its remoteness and distance from the power centres of the eight Arctic states. Maps then can be seen as central to constituting imaginaries and indirect experiences of the Arctic. Furthermore, as Dodds (2010: 64) argues, maps of environmental changes, new polar shipping routes, and possible natural resource potentials contribute to enhancing a particular understanding of the Arctic as a site of intensifying geopolitical competition. For example, when justifying China's involvement in the Arctic, the Chinese ambassador to Iceland refers to 'The world map': "If you look at the world map, apart from the eight Arctic countries, China is one of the countries that are closest to the Arctic Circle" (Olin, 2019, September 7). Besides arguing for a legitimate role in Arctic politics, politicians also illustrate visions of, for example, new shipping routes and natural resource potentials in the Arctic by using maps. While maps are commonly used when defining and conveying issues about the Arctic, however, less attention is paid to the framing of the Arctic and Arctic issues themselves. When maps are used to examine Arctic issues they are often regarded as tools for settling legal disputes over territory (cf. Strandsbjerg, 2012) or used to portray a nation's identity, presence, or claim to the Arctic territory (cf. Bennett et al., 2016). In this article, I aim to advance the scholarship on the mapping of the Arctic by highlighting how maps are embedded in Arctic politics and examining maps' constitutive role in Arctic politics.

To illustrate how particular assumptions about the Arctic are being (re)produced and sustained via the use of maps, I will analyse a set of two maps showing the predicted quantities of oil and gas resources in the Arctic Ocean basin from the United States Geological Survey (USGS, 2008). I argue that due to their circulation and authority, these maps often go unquestioned in Arctic debates, reproducing dominant ideas about there being undiscovered fossil fuels at the same time as challenges coming with the rapid climate change impacts in the Arctic. Hence, I find it important to understand how maps become part of such discourses surrounding 'challenges' and 'opportunities' in the Arctic, but more importantly how they give way to particular visions and certain actors, while silencing others. I argue that instead of being neutral background information figuring in a journal article, a scientific study, or a book about the Arctic, these maps in themselves can be the subject of a study about the Arctic. Therefore, rather than centring on the power of a specific actor to propagate various political alternatives through the use of maps, this study centres on the map itself; its choice of map projection, use of symbols and colours, and its inclusions and exclusions. Theoretically, I aim to further our understanding of how maps perform the political in indirect ways, rather than falsifying it or seeking to establish direct causal links between maps and political decisions or outcomes.

The excluding power of maps - silencing alternatives

To understand the constitutive power of maps I draw on the fields of critical cartography and visual politics. Compared to previous studies of the power of maps, which tend to focus on how the map-maker's interests are implicated in the map or how well a map communicates its political message (Harley, 1988, 1989; Monmonier, 1996), I argue that unpacking cartographic truth-claiming, naturalisation, and materialisation provides a more exhaustive understanding of how

maps perform the political and how the constitutive power of maps operates (Lindberg, 2019). Maps, like other visual representations, can be said to constitute and shape politics because they set “the conditions of possibility through which politics takes place” (Bleiker, 2015: 884). This is where the visual elements of the map become central and why the visual politics field needs to scrutinize maps: the truth of what is represented in the map is assisted by the map’s visual representation in which maps are perceived as mirroring the real. An example is how many world maps unproblematically represent all water bodies as blue, establishing blue as the universal representation of water and all water bodies of the world to be of the same character. With cartographic truth-claiming I mean that maps, like other representations, can be seen as products of knowledge as well as producing knowledge and truths about the world (Shapiro, 1988). Furthermore, the truth-claiming lays the foundation of how elements in the map can be naturalised as ‘facts’.

Moreover, cartographic naturalisation is produced by the selection and omission of certain elements that make “a particular way of looking at the world appear to be part of the natural order, ‘just the way things are’, and hence difficult to argue against” (Neumann & Nexon, 2006: 19). Thus, a map can help naturalise, and therefore depoliticise the political judgements inherent in a map’s selective representation (Ferguson, 1996). Moreover, to the extent that users of a map accept what the map shows and what it fails to reflect in its dominant discourses, they implicitly recognize and strengthen the status quo power relations. For example, to show a map when speaking about a country is a representational practice that is so familiar that it seems natural and not a social practice and rhetorical gesture (Shapiro, 1988: 93). This practice is also common in articles and books about the Arctic and Arctic issues, where the Arctic is represented as an (often ice free) ocean surrounded by nation states. This can, for example, contribute to strengthening the authority and legitimacy of nation states contra non-nation state groups such as Indigenous peoples. Hence, whenever something is naturalised, there is something else that is silenced – one reality is privileged over another (Harley, 1988). Another example of an often unintentional silence is how standardization in maps generates “the silences of uniformity” in which much of the character and individuality of local places become absent (Harley, 1988: 65). Hence, the power of maps lies in their exclusion of other alternative understandings. This involves making decisions as to what to include and what to exclude in a particular map representation. Such decisions render certain issues and geographical sites visible, and others invisible. Thus, it can be argued that maps limit what Bleiker calls “thinking space” (2015: 258), directing attention and resources to specific political alternatives at the expense of others. To use the previously given example, directing focus on the role of nation states over other political or cultural organisations of peoples.

If the power of a map operates successfully by constituting an object or place as a true or natural domain, then it can have material effects because it is taken as “a primary given” (Butler, 1993: 10). Butler (1993) argues, that it is precisely when something appears outside power and discourse that its power is most effective, which I argue often is the case for maps. For example, in a study of how Port-au-Prince, Haiti, is represented in maps, Lemay-Hébert’s (2018) found that colour zoning on maps of so-called safe and unsafe areas affected not only how United Nation officials regulated their interventions but also how local people themselves talked about, thought about, and acted in their city. The colours of the zones on the maps – e.g., red, yellow, and green – became part of people’s self-identification and helped establish an imagined geography of insecurity in Port-au-Prince. This study shows how the visibility of maps have material effects on thinking and acting in

ways that people may not have intended or imagined (Lemay-Hébert, 2018). Thus, I find the concept of material effects helpful in explaining maps' constitutive power. I use the term cartographic materialisation to explain how maps not only can constitute reality today, but also can constitute what is not yet materially real: maps' ideational power can enable particular expectations about the future, which can later materialise (Corner, 1999; Branch, 2014). Hence, what a map represents as being real in the Arctic, such as new shipping routes or occurrences of natural resources below the melting sea ice, can contribute to building certain expectations about the future, which can drive economic investments and their materialization. In order to unpack the constitutive power effects that the USGS maps harbours, I will deconstruct the USGS maps using an analytical framework discussed in the following section.

Deconstructing the maps

To problematize and analyse contemporary maps as visual representations, I have developed an analytical framework based on the merging of analytical elements associated with the critical cartography and visual politics fields, coupled with elements from Bacchi's (1999, 2009, 2012) 'What's the problem represented to be?' (WPR) approach. The analytical framework is built to allow a close reading of specific maps to analyse them as if they were 'strange' and unfamiliar. In this way, I uncover the assumptions required in order to understand the map as well as highlight the elements that might have passed unquestioned if the analysis had only focussed on what the map-maker intended. Moreover, my aim is not to improve the design of particular maps or make them more accurate or 'ethical', as advocated by Harley (1991). Instead, the analysis aims to unpack the map's constitutive power effects and to make it possible to reflect on the complex implications that maps have in shaping the conditions under which political discussions are held. As I argued above, the constitutive power of maps can be said to operate through cartographic truth-claiming, naturalisation, and materialisation.

First, maps make cartographic truth-claims through their visual representation such as their use of a particular map projection, focal point, signs, and colours. For example, all map projections come with particular inclusions and exclusions since they always emphasize somewhere at the centre of the map and thereby make hierarchies in the map representation, either intentionally or unintentionally. I interpret and deconstruct these elements in the USGS maps inspired by the analysis of maps within critical cartography (see Harley, 1988, 1989; Wood & Fels, 1986, 2008; Wood, 1992, 2010). Here I consider the visual and textual content of the map itself and what it shows. This helps to illustrate how 'facts' are attributed to the maps by discourses and to disturb how maps are taken for granted. Second, the cartographic truth-claims are embedded in already existing dominant assumptions about the Arctic, for example, the 'natural' existence of petroleum resources. Thus, maps make use of cartographic naturalisation by reinforcing these assumptions as well as establishing new ones. Therefore, I continue the deconstruction of the maps by asking the following questions: What is the Arctic represented to be in the maps? What assumptions underlie this representation and what is silenced? Third, the cartographic naturalisation of a particular map representation can lead to the materialisation of the expectations about what is not yet real. Hence, to finalize the analysis, I build on the previous two steps of the analysis to uncover constitutive power effects, divided into discursive, subjectification, and lived effects following Bacchi's (1999, 2009) WPR approach. Firstly, I look at how the map is informed by, reproduces, and naturalises assumptions and discourses about 'the Arctic'. Secondly, I draw attention to the ways in which

'subjects' are constructed by the map representation and becoming specific kinds of 'subjects' (Bacchi & Goodwin, 2016). Thirdly, I focus on the self-meaning-making that the maps pertain to people living in the Arctic and ask: How does a map of the Arctic and Arctic issues/problems benefit some people while potentially harm others? Together with the lived effects, I also scrutinise how map representations help materialise certain ideas and visions that get to dominate in the context of perceived Arctic futures. In what follows I present, interpret and deconstruct two USGS maps showing undiscovered oil and gas.

The USGS maps and the making of Arctic petroleum

Among the many tasks of the United States Geological Survey (USGS) is the estimation of petroleum resources around the world. These estimations are often represented in maps. In 2008, the USGS presented a four-page fact sheet which, according to the USGS, was "the first publicly available petroleum resource estimate of the entire area north of the Arctic Circle", accounting for almost 10 percent of the world's known petroleum resources (USGS 2008, July 23, sec. 2, para.1). In this fact sheet, there are two maps showing the estimations of undiscovered oil and gas in the Arctic. The maps are based on existing geological knowledge without making any drilling tests. Hence, the maps make estimates about a 'reality' of petroleum resources in the Arctic and are good illustrative examples of how maps can make something 'real' that which is actually 'not yet' (Corner, 1999). This, for example, represents potential energy security stakes in the Arctic. Bennett (2016: 266) argues that the USGS' appraisal of Arctic petroleum follows a proliferation of geological surveys in the Arctic that can be interpreted as a return to a "mapping mania" expressed in actors' pursuit of natural resources. Maps can in turn give rise to expectations about future oil and gas discoveries in the Arctic and the economic wealth that they might bring to states, private businesses, and local inhabitants. Moreover, the USGS, and in particular the fact sheet from 2008 containing the two maps, is commonly referenced when politicians, academics, and others refer to the potentials of finding oil and gas in the Arctic region. Therefore, I analyse the USGS maps (Figures 1 and 2 below) as examples of maps that represent statistical estimations of petroleum and where they are found, naturalising and materialising the prospects of finding oil and gas which has constitutive consequences for how the future in the Arctic is thought of.

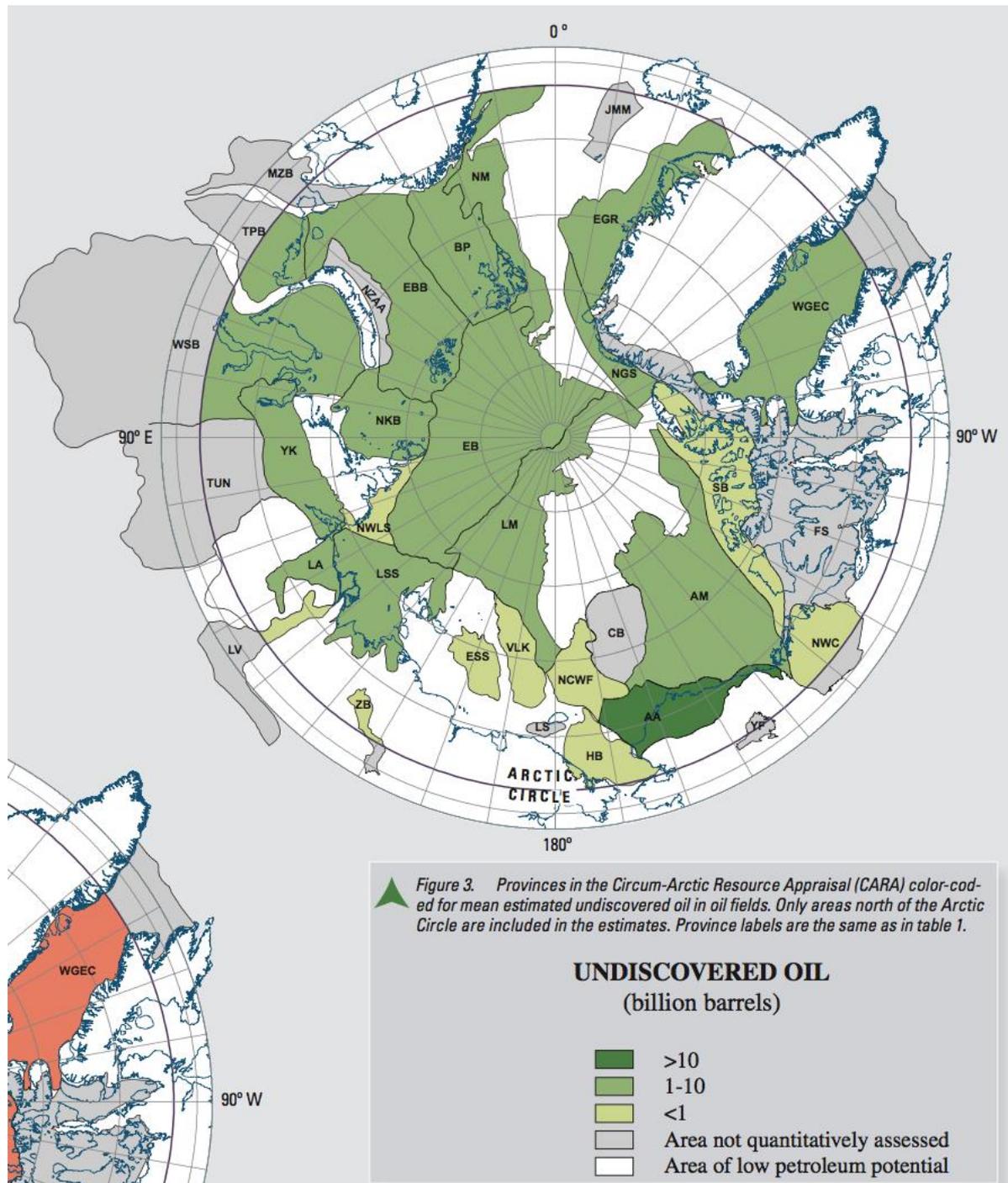


Figure 1. The USGS map of undiscovered oil (USGS, 2008: 3)

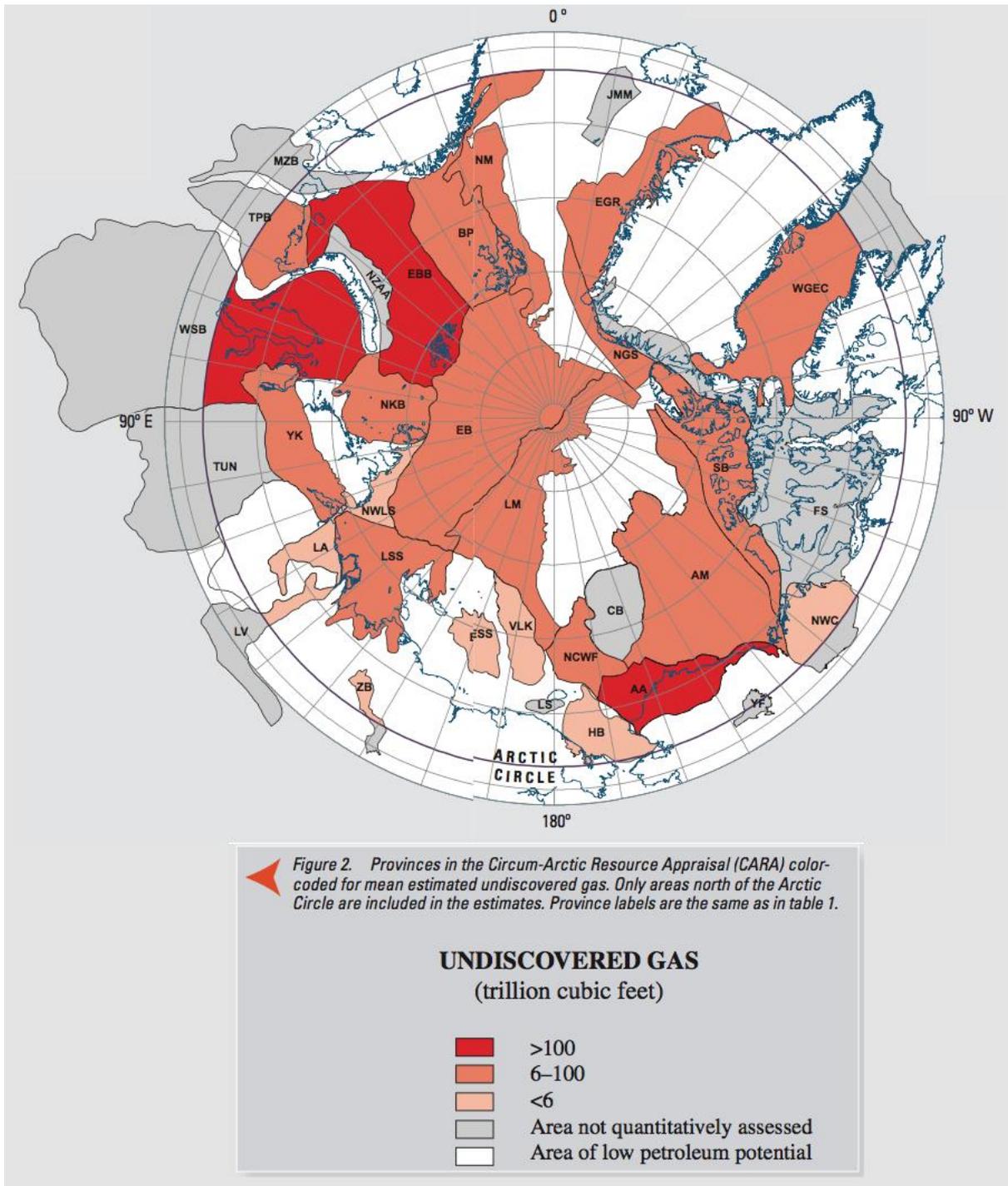


Figure 2. The USGS map of undiscovered gas (USGS, 2008: 2-3). Modified to fit the page by the author.

Underlying assumptions about nature and natural resources

The USGS maps use a map projection centered on the Arctic Ocean and the North Pole as seemingly seen ‘from above’ without mentioning either by name. During the 1930s to 1950s, maps using polar projections became popular as the world was at on the dawn of air-age globalism (Barney, 2018), reflecting the merging (American) “airman’s view” of the world (Henrikson, 1979:

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174). Compared to maps using the common Mercator projection, where the Arctic becomes a large, stretched out area 'on top of the world' with the continents lined up beside each other, the polar map projection shows the close proximity between the northern parts of Europe, Canada, the USA and Russia across the North Pole. In particular, during the Cold War it pointed out the strategic position of the Arctic region and the closeness to the Soviet Union for American audiences. Thus, Boria (2015) argues that the use of polar projections has contributed to a new planetary consciousness about cartography both among scholars and the general public in America. The polar projection in the USGS maps highlights that the geopolitical interests in the Arctic region are shared among powerful states and that Arctic petroleum is a contested resource. Moreover, centered on the North Pole, the Arctic becomes connected region and the Arctic Ocean a 'whole ocean' rather than an elongated, disconnected ocean. Together with the absence of other petroleum regions in the world, this contributes to emphasize the centrality of the Arctic and its petroleum potentials.

Furthermore, by showing the estimated quantities of oil (green) and gas (red), the USGS maps reshape the Arctic from an unexpected place to a calculable place (Albert & Vasilache, 2018). This helps constitute Arctic petroleum as 'real', discoverable, and ownable (Harley, 1988). Moreover, the green and red colours only appear within the Arctic Circle, while the areas that stretch beyond the circle become grey or white. Thus, by making oil and gas 'exclusive' within the Arctic Circle, the USGS maps can be said to naturalise assumptions about the Arctic as a place of petroleum resources. Through the making of truth-claims about undiscovered oil and undiscovered gas, the USGS maps enable and materialise expectations about the availability of petroleum resources in the Arctic. Meanwhile, since the USGS maps represent no variations between land and sea, or in the sea and seabed, they silence any obstacles to the possible discovery of oil and gas. Similar to other USGS inventories that frequently centre on the potential availability of natural resources, nature becomes a site that may be dug up, gathered, or harvested. Although they are geological maps, which their main purpose is to show geological occurrences, the USGS unintentionally make a powerful representation of how to view the Arctic and what is important in this region.

Silencing peoples and politics

By not representing any human settlements and infrastructure - the peoples who live in the Arctic - the USGS maps make it possible to ignore political issues relating to large-scale oil and gas exploitation or environmental concerns, as well as local peoples' rights to resources. By silencing nation states as well as local peoples and their concerns about resource exploration and exploitation, the USGS maps contribute to the displacement of any Arctic political authorities such as governments, both national and local, as well as any conflict over the natural resources. This also makes it possible for the USGS maps to enable thinking about the coloured green and red areas as being 'up for grabs', simply waiting to be discovered by aspirational actors. Furthermore, since oil and gas are non-renewable resources, their continued extraction and usage depend on the availability of more geographical areas to extract from. Hence, the USGS maps play a part in raising expectations among states, investors, and energy companies about the presumed discoverable oil and gas resources within the Arctic Circle.

Moreover, the dissocialised and static representation of the undiscovered oil and gas resources in the USGS maps are in line with Harley's (1992) argument surrounding the anticipatory use of maps. According to Harley (1992: 532), making maps that project an anticipatory territory was the first

step in appropriating space from a distance and, in so doing also, choreographing colonial expansions. In the same way as the Americas had to be invented and integrated into the European consciousness through maps before they could be colonized, Arctic oil and gas are being creatively mediated as discoverable through the USGS maps, even before their proven discovery.

Materialising petroleum expectations

The USGS maps can contribute to raising expectations about a profitable economic development that might arise from extraction of oil and gas. These petroleum expectations can have material effects as well. For example, expectations can rise regarding foreign investments and potential workplaces when estimations are made about the potential for extracting petroleum (Weszkalnys, 2015). The significance given to the estimation of potential oil and gas findings can drive expectations about a future in which Arctic communities embark on capital-intensive petroleum developments as the preferred development path. This also raises expectations in some of the Arctic states, such as Canada and Norway, to continue the production, sale and/or consumption of oil and gas energy resources despite the dangers of climate change to human wellbeing in the region (Gjørsv, 2017). Furthermore, by simply naming and mapping potential 'Undiscovered oil' and 'Undiscovered gas', these resources become extracted from their natural subsoil texture and fed into human dreams about wealth and power, with little connection to the immediate natural reality of these resources (Žižek, 2008 in Jonsson, 2014). Thus, Jönsson (2014) argues that in the context of the politics of expectations and the role of experts and expert knowledge (such as maps), any prospects and promises of future resource discoveries affect future visions and ambitions. For example, Weszkalnys' (2015) empirical study of Sao Tomé and Príncipe, an island country in the Gulf of Guinea, shows that entire populations may be left in a state of expectation while oil is being explored at a massive expense and with uncertain results. This state of expectation may last for a long time as the extraction of petroleum depends both on the geological conditions and the price on the market. Hence, the USGS maps may materialise petroleum expectations and draw investments and resources into fulfilling this expectation, while it may never actually materialise.

The USGS maps have been made to show the estimated petroleum that could be found in the Arctic. Their focus is of course therefore primarily on petroleum. It is this selection of what to include and what to exclude in the map's representation that legitimates the need for a map (Wood, 1992). Through its selection and focus on something at the expense of something else, the map distinguishes itself from the world it represents. Thus, if a map shows everything, we would not have any use for it. However, this unavoidable need for selection and therefore exclusion does not mean that a map is always politically manipulated. Although map manipulation has and does occur, nevertheless, my focus is not on such deliberate political interventions in maps, nor on how truthful or factual a map is. Instead, my contribution lies in theorising the constitutive power of maps and the unintended effects of their usage and reproduction. While I acknowledge that some maps, such as geological or topographical maps, may be more objective than others, the theoretical argument here focuses on the deep-seated assumptions that underlie the map selection process. Such assumptions relate to, for example, what to include/exclude in a map representation according to what is found to be relevant/irrelevant or how to represent places and issues in particular colours or symbols according to a hierarchy of assumed significance. Hence, it is the visibility in the map that makes the assumptions embedded consciously or unconsciously into the map representation that contributes to maps' constitutive effects, such as the power to shape ideas about what can be.

Through my interpretation and deconstruction of the USGS maps I have suggested that the USGS maps materialise the construction of the Arctic as a place harbouring undiscovered oil and gas resources: the two maps highlight the availability of undiscovered oil and gas as the main features within the Arctic Circle. Overall, the USGS maps make truth-claims about estimations of the potential quantities and geographical locations of 'yet-to-be' discovered oil and gas resources, while at the same time encouraging the pursuit of these petroleum resources. Thus, the maps in question are good examples of how seemingly unbiased, neutral expert knowledge mediated in maps can raise expectations about the future of a particular region and limit the range of ideas and future visions of that space. Such mapping practices can impede upon alternative visions of the Arctic future by focussing mainly on the exploitation of non-renewable natural resources, rather than investing in existing or emerging social and creative resources.

Concluding remarks

This study of the power of maps shows how the Arctic is constituted through discursive practices and visual representations embedded in maps. The empirical analysis has shown how the USGS maps contribute to the materialisation of oil and gas by simply visually constituting their existence, raising expectations about petroleum resources that might be discovered in the Arctic. More specifically, I offer two conclusions: 1) The USGS maps give rise to an understanding of the Arctic as a place of petroleum resources upon which the political visions about oil and gas exploitation are directed and legitimated; and 2) The Arctic and any possible oil and gas discoverable are represented in the USGS maps as seemingly 'up for grabs' by interested parties, including non-Arctic states and businesses. Thus, the constitutive power of the USGS maps lies in its cartographic materialisation of undiscovered petroleum together with their disregard for the politics surrounding any petroleum exploration and exploitation. While this disregard is to be expected from geological maps in general, I find the visual representation in the USGS maps to shape assumptions and create particular points of departure from which the Arctic is understood and upon which political choices are made.

Importantly, my critique has not been about falsifying the USGS maps or questioning the intention of the geological survey, but rather to emphasise the underlying assumptions that inform how these maps depict 'the Arctic'. I have shown that maps tend to reinforce and reproduce prevalent dominant discourses and argue that there is a need to recognise that all maps are constituted by politics as well as having the possibility of constituting politics, including geological maps. Hence, the tendency to use maps to create allegedly objective scientific certainties needs to be constantly questioned to achieve a fuller picture of the functions and powers of maps. This is perhaps particularly important in the Arctic region where many important decisions are made by people outside the region itself. Therefore, instead of arguing for abolishing the use of maps to convey information, I advocate the making and use of various types of maps that highlight different map projections, focal points, cardinal directions, symbols, colours, and languages, as well as the issues represented. This involves calling for a wider and more diverse inclusion of maps, including those made by local and indigenous peoples, when trying to understand commonplace ideas about the Arctic, opening up the thinking space, which in turn could enable the reconceptualization of alternative futures for the Arctic.

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