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Review article

Petroleum as a challenge to arctic societies: Ontological security and the oil-driven 'push to the north'

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ABSTRACT

This paper uses the 2014–2015 plunge in oil prices as a linchpin for understanding how petroleum development represents a challenge to Arctic societies. Analysis of media discourses, grey literature and fieldwork material from 2013 to 2017 compared with previous work in the region shows that the 75% price decrease in oil price brings into stark relief the perceived level of ontological security that future petroleum economies in Northern Norway, Alaska and Greenland provides. The findings reveal that while the communities in each location find themselves along different timelines of the petroleum economy, there are transferable insights that can benefit other communities influenced by (the potential for) petroleum development in both the Arctic and beyond, in particular concerning the way in which specific ideas about oil and oils future features as contributing to or diminishes ontological security perceptions on the ground. The goal of this paper is to deepen the comparative analysis of research on tensions in Arctic communities as petroleum is perceived as either strengthening or threatening future ontological security in the region. The discussion considers the consequences of path dependent petroleum economies, and how perceptions on alternative futures can fruitfully be introduced into petroleum-dominated narratives about viable Arctic futures.

1. Introduction

The situation in the summer 2014 couldn't look brighter for Arctic offshore oil industry. The oil price was around US 120 per barrel; an ice capable drill rig was under development between Exxon and Rosneft; licensing areas had been opened and subject to bidding rounds in Greenland, the Beaufort and Chukchi Seas, and the Barents Sea; and Arctic sea ice retreat promised longer ice-free seasons with greater access to potential drilling sites. In Norway, a decades-long dispute about the division of sovereignty over the parts of the Barents Sea had been signed with Russia, enabling the long-awaited 23rd and 24th licensing rounds to be launched, primarily focusing on these northernmost regions of the Norwegian shelf. Thus, petroleum policies seeking to extend the Norwegian petroleum period for as long as possible seemed almost unchallenged, except by a few environmental organizations and four small political parties (the Green Party, the Christian Democrats, the Liberal party and the Socialist Party). In the United States, the shipments and logistics of outer continental shelf leases promised continued petroleum-related revenue for the Alaskan state and the North Slope. Shell was eager to bank in on its decade of investments and deploy its Chukchi Sea drill rig to ascertain the expectedly high-quality oil deposits and enjoyed high support among North Slope residents. In Greenland the Self-rule Government, Naalakkersuisut, presented a new strategy for hydrocarbon development, that included licenses offshore in West Greenland (Naalakkersuisut, 2014). It also allowed for new licensing rounds in Disco Bay and West Nuussuaq, two of the in total four defined areas for potential offshore in North West Greenland.

The expectation that oil prices would increase over coming decades comes from the notion of 'peak oil', where it is assumed that the world's petroleum reserves are known, and that prices therefore should increase as supply dwindles. Observed trends in the price of petroleum seemed to confirm this assumption: while the 2008 financial crisis had interrupted a period of rapid growth in oil prices, prices recovered quickly and continued the growth trend (Fig. 1). The following stability in oil prices over the period 2011–2014 created seemingly predictable investment conditions. The rapid demise that ensued (Fig. 1) took many by surprise (Baffes et al., 2015). Late in 2014 prices plummeted from USD 110 per barrel to well below USD 30 by January 2016. The surprise was produced by a series of factors that contributed with varying

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Fig. 1. (OPEC basket value of crude oil, 2003–2017 (based on data from OPEC).[29]

degrees of predictability. Baffes et al. (2015) argue the two principal drivers were i) the OPEC decision to renounce price support together with ii) the rapid emergence of unconventional oil supply such as shale oil and tar sands. Additionally, global demand in petroleum products showed a decline; there were ongoing political efforts to unwind geopolitical risks; and the U.S. dollar strengthened significantly (Baffes et al., 2015). As a result, profits shifted from oil producers to oil consumers, with a concomitant increase in fuel use and loss of income for producers.

2. Ontological security and arctic offshore petroleum

This paper contributes insights from case studies in Barrow, Alaska, Upernavik in North-West Greenland and Northern Norway (and the Lofoten region in particular) to examine how communities derive a sense of ontological security via the Arctic petroleum industry. In doing so, the paper builds upon and strengthens research-based knowledge on the interconnectedness of a broadened security understanding, identity politics and the notion of viable, desirable futures as fundamental for the way potential petroleum development is interpreted and ultimately received in both national populations in states and communities in the Arctic. We will use Anthony Giddens' concept of ontological security to show how industrialization processes connected to petroleum development influence Arctic community perceptions of the future. Giddens' starting point when introducing the concept of ontological security was the relationship between population and the state, and particularly the obligations of the latter to provide for a continuity in a sense of identity and belonging. In an often-cited definition, Giddens ascribes the state as the main, if not sole, responsibility for ensuring that the population are not only *kept* safe physically and objectively, but also that it *feels safe:*

> "… (ontological security is) the confidence most human beings have in the continuity of their self-identity and in the constancy of the surrounding social and material environments of action" (Giddens, 1990: 92)

The ontological security concept broadens the limitations of traditional security from its focus on material, physical security threats to include, indeed take as a starting point the human need for an identity, a sense of place, for order and knowledge about the world. Consequently, this article adheres to calls for a deepening and widening of security studies pertaining to the Arctic (Dale and Kristoffersen, 2018; Gjørv et al., 2016; Greaves, 2016; Hoogensen Gjørv, 2012; Stuvøy, 2011). Within critical security studies, a debate concerning *who secures* has been ongoing for at least two decades, a debate which also has revealed that ontological security assumptions can be *conservative*, as they focus on *what we know and how the world makes sense*, meaning that interruptions in these assertions by abrupt changes may cause ontological *insecurity*. Elsewhere, writers such as Marlow (2002) and Hawkins and Maurer (2011) as well as proponents of a risk society outlook (Beck, 1992, 2009; Mythen and Walklate, 2006), a cultural theory of risk (e.g. Boholm and Corvellec, 2011; Douglas, 1992; Funtowicz and Strand, 2011; McEvoy et al., 2017; McNeeley and Lazrus, 2014), and risk perception (Veland et al., 2013, 2016) have also broadened and deepened the ontological security debate and shown the broad applicability of the concept. This literature seeks in part to address the fact that a broad range of actors besides (and often in lieu of) the state provide ontological security, and in part to give attention to how this security is derived from an individual and community expectation of security and continuity in the conditions that provide people with a sense of identity and belonging. Our understanding of ontological security has also been informed by recent debates on the role of individual and societal anticipation (Granjou et al., 2017; Groves, 2016) in shaping imaginaries of desired futures, and – specifically tied to the role of petroleum – how the idea of *carbonscapes* dominates notions of what is perceived as achievable concerning future energy and economic security (Haarstad and Wanvik, 2016).

Ontological security obviously ties to climate change too. Beck (2009) pointed out that climate change "… contradicts the state guarantees of security …", exemplifying how world risk society "… compels the nation-state to admit it cannot fulfil its self-declared constitutional promises, namely to guarantee its citizens what is arguably the highest legal good, their security" (Beck (2009): 41). In this admittance, Beck (2009) argued "… the three pillars of security are crumbling - the state, science, and the economy are failing to provide security" (Beck (2009): 45). With the petroleum economy, this problem is compounded: the state is failing to provide safety from climate change, while the economic security is dependent upon continued petroleum extraction, and science is failing to provide viable options. Locally, the importance of continuity for ontological security is at odds with the boom-bust nature of the petroleum industry. Thus, petroleum is paradoxically both a provider of ontological security, and a source of increased ontological insecurity, a point also well documented and analyzed by Haarstad and Wanvik, mentioned above.

Together, these studies of ontological security strengthen the need to see individuals not only as recipients of, but also producers of security, and how identity politics come to have a bearing on ontological security. In particular, the way self-identity is produced, presented and affirmed *below the state* holds explanatory value when seeking to understand opposition to state priorities that *could* be understood as aiming at enhancing the ontological security of the population as a whole. Ongoing work on the petroleum industry in the Norwegian Arctic also illustrates this paradox. Bjørkan and Veland (in review) find that subjective perspectives on the risks from petroleum in the Lofoten, Vesterålen, and Senja (LoVeSe) region were clearly scaled – from local concerns for culture and fisheries, to national concerns for sustaining the welfare state, and global concerns for climate change. They also showed in an earlier paper (Kristoffersen and Dale, 2018) precisely how identity matters for locals in Lofoten when the matter of petroleum is concerned,- to a larger extent than perhaps decision makers on the national level had anticipated when the debate was initially brought to

the fore. More recently, Karlsson and Dale (in review) found this confirmed in a new study in the same region of local responses to and reflections on the interconnectedness between projects with an extractivist ambition and conservation efforts.

One of the main challenges facing humanity in the 21st century is the need for energy combined with the necessity to cut back on fossil fuel consumption (IEA, 2016; McGlade and Ekins, 2014). As has been observed elsewhere (refs), the ability to make the necessary changes in the world energy system is not merely a technical or economic one; it is also a matter of enabling an *ontological shift*, away from the dominant oil ontology of the past decade. This need is pressing on two fronts: first, on the global flow of energy and resources, where societies must transform away from petroleum-based products and processes (ranging from plastics to fuels); and second, on regions and nation-states that derive a significant proportion of their income from petroleum to find alternative economic activity. For the communities visited in this study, these two fronts meet, in regions where climate change is already transforming the social-ecological systems. Economically, the growth paradigm (and associated increase in global quality of life) dominating future trajectories is heavily dependent on petroleum as a source of cheap and easy to transport source of energy (IEA, 2016; Pasten and Santamarina, 2012; Statoil, 2017). Politically, the petroleum dependency of nations is manifest in both domestic policy making and in geopolitics (Andersen, 2016; Kristoffersen and Young, 2010; Overland, 2015; Rowland and Mjelde, 2016).

Technically, a world dependent on oil has over the last century established infrastructure and intensively geared technical innovation towards the exploration, exploitation, and utilization of oil, the effect of which is a technological path dependency that proves hard to deviate from (Geels, 2014; Haarstad and Wanvik, 2016; Unruh and Carillo-Hermosilla, 2006). And last but not least, ontologically, there's the necessity to break free from a world view in which the above-mentioned facets of oils dominance have produced a global, dominant belief in the pursuit of happiness based on the excess usage of cheap energy, and to break the assumption that oil cannot be replaced (Barrett and Worden, 2014; Kristoffersen and Dale, 2018; Dale and Kristoffersen, 2018). Nevertheless, some petroleum products will be demanded for the foreseeable future, raising the question of which reserves should remain open to exploration and drilling (McGlade and Ekins, 2014; McGlade and Ekins, 2015; Muttit et al., 2016). For Arctic communities already experiencing transformative climatic change, petroleum and other extractive industries promise the funding to afford expensive adaptive measures. Arctic petroleum is indeed an Arctic paradox, where global greenhouse gas emissions drive Arctic amplification with adverse impacts on arctic livelihoods, but simultaneously drive up the need for, and the access to Arctic petroleum resources.

The way futures are imagined as manageable through the development of specific technological fixes is embedded in a specific socially and culturally constructed ontology. The focus on *sociotechnical imaginaries* "… (is a) new approach to understanding the collective cognitive schemas that bound 'rational' pursuits of innovation through policy transformation" (Tidwell and Tidwell, 2018: 103), tying the way we construct technical solutions analytically to the notion of (future) expectations (see also Jasanoff and Kim, 2013; 2015). In other words, the future is reduced to a set of conceivable and acceptable risks to be managed and minimized through technical solutions, i.e without challenging the ontological assumptions of how the world works (Veland et al., 2013). In this way, a linear approach to the development from a (in the case of oil not so distant) past through the current state to an imagined specific future is established through the construction of scenarios and assessments (Dale and Kristoffersen, 2018). Thus, the oil ontology survives as the future is understood as a place where the ontological imagination of the importance of oil prevails, a place where oil is still needed because it provides a familiar sense of agency and belonging (Dale and Kristoffersen, 2018). In addition to risk perception research (Kahan et al., 2011), this demonstrates that the two dominant knowledge traditions informing political decision-making to date – the techno-scientific and economic-instrumental traditions – are inadequate when seeking to understand and explain local and regional rationalities underlying behavior and sentiments influencing political decisions in matters concerning (potential) future petroleum extraction in the Arctic (e.g., Dale 2016; Hansen and Tejsner, 2018; Kristoffersen and Dale, 2018; Nuttall, 2017).

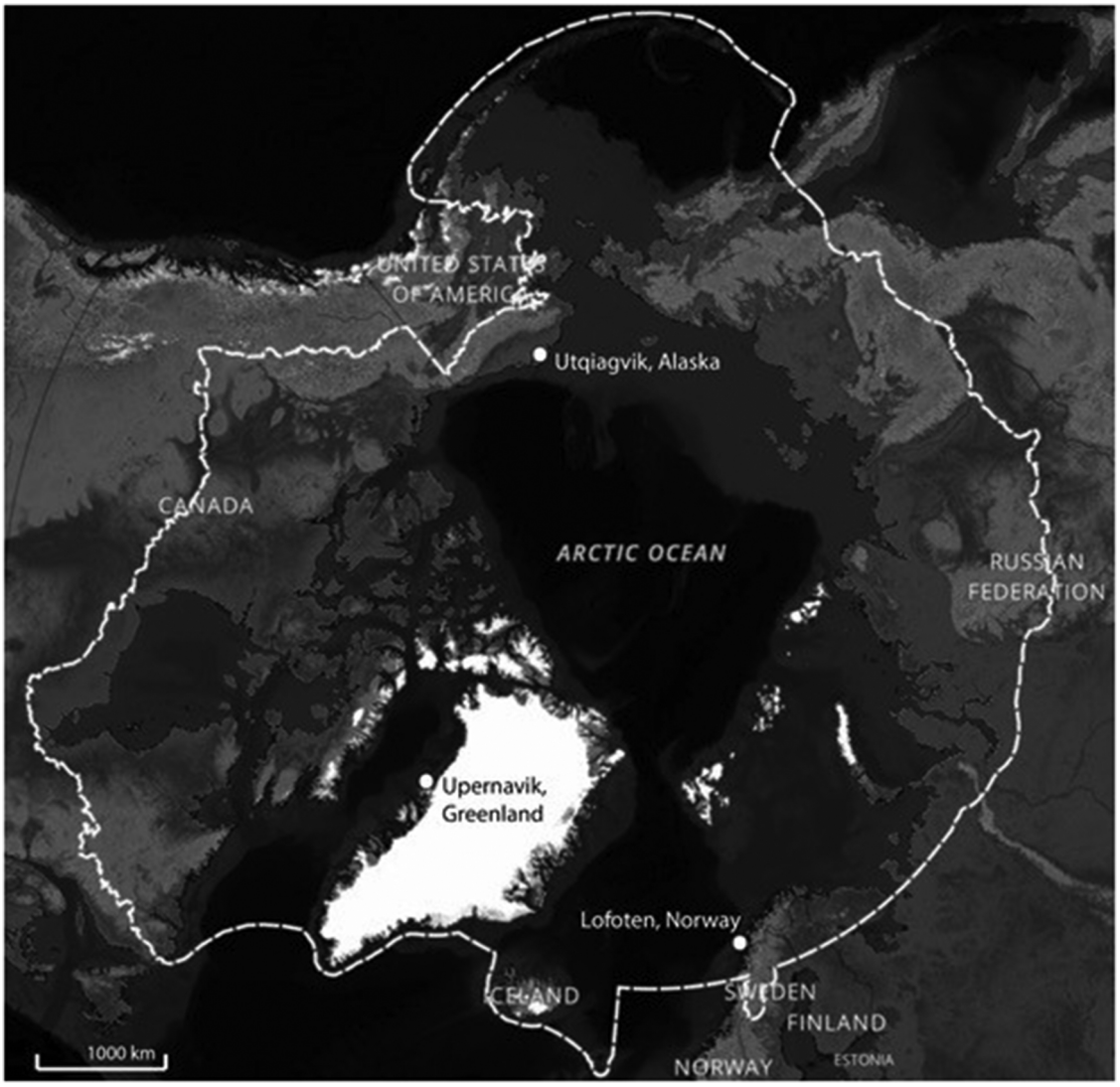
Here, we draw these findings into a broader Arctic context, and focus both on the way ontological security is provided through a particular kind of government – and thus is part of what one might call a study of more traditional power relations between the governed (the people) and a governor, i.e. the state (Marlow, 2002) – and the ways in which this power relationship is re-affirmed and reconstructed in the intersection with narratives of Native and local communities, researchers, nongovernmental, international, and industry actors (Veland and Lynch, 2018).

3. Data and methods

In all three case sites, we draw from written sources as well as ethnographic and interview material. We performed a qualitative media analysis in each site, and relevant reports, strategic documents and other grey literature were included. The authors performed interviews with stakeholders locally and regionally and conducted ethnographic fieldwork with the aim of considering the role of risk perception and ontological security in everyday settings and discourses. Three fieldwork periods from 2014–16 in Alaska included 12 interviews and participant observation with Native and non-Native residents in different capacities in Utqiagvik (Barrow), as well as with mostly non-Native researchers, government, nongovernmental organizations, and petroleum corporations in Anchorage and Fairbanks. In Greenland, data from ethnographic fieldwork in the period between 2012–2016 is included in the analysis, conducted, both in the Upernavik district in North West Greenland, in the capital Nuuk, and in other areas where comparable concerns about extractive industry activities were discussed with protagonists. Further, stakeholders were in 2013 invited to discuss the question of where Greenland will be fifty years from now and to point out the two most significant key driving forces. Twenty-five stakeholders including researchers, business leaders, planners in ministries, planners in municipalities, media, politicians, interest organizations and individuals participated (Hansen and Larsen, 2013). Subsequently, twenty-two students from Ilisimatusarfik, University of Greenland met to discuss the potential positive and negative impacts of the extreme scenarios the earlier workshop had stretched out. In Lofoten, Norway, where one of the authors lives, a continuous observation of local responses to the potential for petroleum development off its shores has been followed up by in-depth interviews and conversations with stakeholders during the period 2014-2017. These data have thus been the basis for separate studies of the ways petroleum represent a challenge to communities in the case regions but are here re-visited with the intention of fleshing out comparative lessons about extractivism and community development. This comparative approach is embedded in a hermeneutic (interpretive), qualitative tradition, seeking to present experiences and narratives enriched by human experiences and sentiments.

4. Oil in Norway, Alaska and Greenland

The three cases here chosen represents three different but still comparable potential Arctic futures pertaining to oil and gas development and was at the beginning of the project (in 2014) seen as sites where the oil-driven 'push for the north' would soon manifest in offshore activities and jobs. Whereas the Alaskan and Norwegian economies have relied heavily on oil for revenues, jobs and innovation since the 1960s and 1970s, Greenland has yet to experience the impacts of oil and gas development on their shores. The cases do however have



Map 1. (Ill. 2: Map over the three case study sites (Lofoten, Norway; Utqiagvik, Alaska; Upernavik, Greenland). The white broken line shows the CAFF definition of the Arctic (WWFArcticmaps.com).

similarities when it comes to the way (potential) oil and gas influence future imaginaries, not least concerning center-periphery dynamics and the way Arctic drilling taps into broader discourses on the future viability of Arctic communities. Indeed, as the plunge in oil prices in 2014-15 laid bare the instability and risks involved in building a future based on an economic dependency on oil, analysts, political strategists and scientists had to re-evaluate their assumptions of future prospects in these regions, not least the financial risks involved (Map 1).

The future of oil in these cases are obviously mirrored by the presence of (or lack of) petroleum revenues, and the way in which it is represented in people's ideas about the future. Therefore, a short introduction to the history of oil our case sites are needed before presentation and analysis of our findings. It is again worth reminding the reader of the difference between levels of analysis on this study: as the American state Alaska and the non-sovereign state Greenland is compared to the region Northern Norway (and specifically the Lofoten area), the common denominator in our analysis is the way one locally – from a community perspective – reflects upon potential futures. Further, for each community, the colonial frontier plays out differently. In Greenland, the majority Indigenous population and state see their independence tied into economic independence through extractive industries (Vidal, 2016). In Alaska, oil products and petroleum have long featured as a linchpin for Indigenous-colonial relations, exemplified in the Arctic Slope Regional Corporation which was established with the Alaska Native Claims Settlement Act (1974) and today has 13,000 Iñupiat shareholders. In Norway, some Sami continue to demand rights to resources in the Lofoten, Vesterålen and Senja regions as well as in the Barents Sea, but petroleum resources have not spesifically been a topic of prominence in Sami affairs. It is worth noting that the Indigenous voice has often been associated with conservationist and traditionalist symbols, such that the Indigenous industrialist may appear 'uncanny' (Veland accepted for publication). While Indigeneity in each case has a role, it is not the distinguishing factor in the sense of ontological security expected from petroleum in any of our cases. In the following paragraphs, then, both national, state and regional themes will be presented, each chosen based on an assessment of importance with regards to the influence it has been found to have on community perceptions of oil's future in the areas.

4.1. Norway: from oil towards the post-petroleum future?

Norway's history as an oil producing country is relatively short. When petroleum was found on the Norwegian shelf in the North Sea in 1967, it was followed by a fifteen-year long period of building the industrial and extractive capacity needed to generate surplus for the oil companies and the Norwegian state. The 1970s and 1980s were thus

characterized by a situation where both financial, technological and political barriers were tested and moved. This happened not without controversy and conflict, as the frontier-style operations in the North Sea were both costly and at times dangerous for workers. Through the 1980s, the political framework for the development of the Norwegian economy gradually changed toward favoring increasingly rapid and excessive extraction, thus increasing income but also the risk of petroleum dependency through 'the Dutch decease'; where a high- income economic sector drives prices and income nationally to the extent that it renders other industries unable to compete on the international market. Through the 1990s and 2000s, the Norwegian petroleum industry boomed due to two concurrent developments: The unparalleled rise in oil prices internationally and an exponential growth in extraction of oil and gas from the continental shelf. The result is an income level unprecedented in Norwegian history, leading both to growth in governmental spending and the establishment and growth of the Norwegian Pension Fund, which today (in 2018) owns approximately 1.6 percent of the world's stock market at a value of approximately US 1000 billion.[1] A generation of Norwegians has grown up under a regime where the valuables under the bottom of the sea seemed ever-lasting and therefore without financial worries (at least on the societal level). This raises the question if this has created a nation unprepared for what is to come, initially hinted to with the falling oil prices in 2014 and the political initiatives thus far culminating in the Paris agreement, and unaware of the test of capacity for change and resilience this and the demand for new policies for mitigating climate change the Paris agreement represents.

As time has gone by since the price fall, however, Norway may have found a path toward seeing a revitalized petroleum industry as the continued principal locus of future investments. As the steady rise in oil prices has been accompanied by expense cuts, investments are again on the rise, and national policies such as the intention to ban the sale of new diesel- or gas cars by 2025 seem to have no immediate deterring effect. On the contrary, the petroleum industry seems to have succeeded in their strategy to position themselves as part of the solution to the challenges the Paris agreement outlines, arguing for the continuation of petroleum development in areas where the CO2-emissions from production are relatively small – as on the Norwegian continental shelf. In addition, oil companies seem to be interested in joining other industries in paving the way for technological development needed for a "green shift" in the business sector, a shift most recently adhered to by Norway's largest oil and gas company as they proclaimed a name shift away from oil – from Statoil to Equinor, stating that this symbolized their intention of moving from being an oil and gas company to be an energy company.[2] As such, their strategic move at least adheres to the changing parameters for dialogue and discussions about energy futures, and thus the future of the Norwegian economic development.

A counter narrative about the future exists, though, as exemplified in research on how the political struggle for an oil-free Lofoten, Vesterålan and Senja (LoVeSe) unfolds. This case reflects a lot of the changes and sentiments expressed nationally and indeed globally concerning the future of oil, although with a regional twist that is, in our view, not without explanatory value; it may in fact explain why it is, as so many has commented, that there in the only region in Norway without oil for decades is such a strong opposition to this development. Almost ten years ago Author 1 first encountered this sentiment; the notion that *'oil is not something we do here. We do fish, not oil'*, emphasizing not only the physical presence of fish and fisheries, but also its *ontological underpinnings*: the way in which one in Lofoten, through the notion of *being fishers*, relates to nature, landscapes, and resources – in short, how this sentiments creates a sense of ontological security (Dale, 2011). When reflecting upon these same sentiments after 2014, many of the same informants – but also others – again referred to these historical roots but would also to a stronger degree than only a few years before refer to *alternative pathways to the future* where other industries, other foci in which the valuing of landscapes and natural surroundings became important; as petroleum has been delayed, other industries – first and foremost fisheries and tourism – has flourished. On the basis of this, new investments and a general positivism has led to new businesses, new activities for both visitors and locals to explore, and as a consequence new jobs that has further supported the trend of an increase in so-called lifestyle-based inflow of people to the region.

4.2. Path dependencies from Alaska's purchase

With the United States purchase of Alaska from Russia in 1867, Inupiat on the North Slope initiated negotiations with the colonial frontier that were to continue to this day. When the territory became a state in 1958, the transition initiated a process of handing over public lands, in which Alaska Natives were concerned they would lose access to ancestral lands, and a push of land claims ensued. With the finding of oil in Prudhoe Bay in 1968, the State was eager to settle land claims so that the building of the Alaska Pipeline from Prudhoe to Valdez could begin. In satisficing both the wish to avoid reservations and treaties, and the state's urgency to begin oil developments, the Alaska Federation of Natives (AFN) were proponents of a system of incorporated Native councils. These Native Councils would be run as firms, with startup capital to support industry. Years of land claims were settled with President Nixon signing the Alaska Native Claims Settlement Act (ANCSA) in December 1971. This agreement secured USD 962.5 million to be distributed among Native Corporations, and 40 million acres of land to be returned to Alaska Natives. With this agreement, Alaska Natives forfeited all future land claims against the State and with hat set the stage for the kinds of negotiations possible between Indigenous and colonial institutions.

The outcomes for most Native Corporations have been mixed, neither providing significant profits or losses. For the ASRC, one of twelve geographic regions to be established in the settlement, the outcome has been highly profitable. With the petroleum resources of Prudhoe Bay, the Alaska Arctic National Wildlife Refuge, and the National Petroleum Reserve within bounds of its territory, as well as potential benefits flowing from Continental Shelf (OCS) developments, the ASRC has outperformed other ANCSA corporations. In 2016, the ASRC is a multicompany with head office in Utqiagvik (Barrow), Alaska worth USD 2.37 Billion with 12,000 employees in regional offices across the United States. Iñupiat shareholders receive an annual dividend that for many subsistence hunters offers access to more modern commodities. For the North Slope, the petroleum industry provides further economic benefit. The North Slope Borough has since 1972 been able to levy property taxes from oil installations, affording Utqiagvik's school, hospital, and other services. In addition, the North Slope residents receive an annual dividend from the Alaskan State's Permanent Fund.

But there are signs the petroleum era may be coming to a close. Over the past decade, the Trans-Alaska Pipeline has been running on half capacity due to reduced flow of oil from Prudhoe. While symptomatic of reduced revenue, this low volume is a risk also to the pipeline itself, which is reliant on a constant pressure to maintain flow. Once the flow drops below a critical level, the pipeline would be unlikely to reopen. As such, there is an urge to find new oil fields. The Alaska Arctic National Wildlife Refuge, the National Petroleum Reserve, and the Outer Continental Shelf (OCS) may contain sufficient petroleum reserves to sustain the pipeline and the North Slope and Alaskan petroleum revenue.

[1] As reported by the Norwegian central bank in their annual report for 2017 on the fond. Downloadable from https://www.nbim.no/no/apenhet/rapporter/

[2] See https://www.statoil.com/en/news/15mar2018-statoil.html, accessed April 5th, 2018.

4.3. Greenland: independence and need for economic development

Contrary to Alaska and Norway, there is currently no commercial extraction of petroleum resources taking place in Greenlandic waters. However, explorations have been taking place with varying intensity since the 1970's. Following a low level of activity in the 80's and 90's, the beginning of the new millennium brought a significant increase in interest, due the upward price trend for crude oil.[3] In 2003, the Government of Greenland, Naalakkersuisut, released a hydrocarbon strategy announcing licensing rounds for blocks offshore West Greenland in 2003 and 2004. The strategy states that

> "…there is broad political agreement to work to develop the raw materials sector in Greenland into a sustainable industry, so that it can contribute positively to economic development and to job creation. This goal is an essential element of our long-term economic policy supporting the development of alternative business sectors (…) in order to reduce the current addiction to the annual block subsidies from Denmark." (Naalakkersuisut, 2003: 5, our translation from Danish).

The blocks opened for exploration raised interest from oil and gas companies and fuelled expectations that development of a petroleum industry would follow.[4] A US Geological Survey published in 2008 indicated that offshore areas between West Greenland and East Canada and the areas offshore East Greenland contain significant oil and gas reserves (Robertson and Pierce, 2008). A new self-rule agreement signed in 2009 further boosted expectations and motivation for a rapid development of the extractive industries, bringing increased political autonomy, and a promise that Greenland could reach full political independence from Denmark whenever subsidies from the State were no longer needed to supplement the economy. The first area of responsibility Naalakkersuisut took home based on the Self Rule agreement was the mineral and hydrocarbon regulation and a new Mineral Resources Act was developed, covering regulation of oil and gas activities. A second hydrocarbon strategy in 2009 included a new licensing round in North West Greenland in 2010 and a two-phased licensing round offshore North East Greenland in 2012 and 2013.[5] The new licensing round led to seven new exploration licenses on the west coast and four new exploration licenses in North East Greenland. In 2010 and 2011 Cairn Energy drilled eight wells offshore Central West Greenland. Even though all wells were declared commercially dry, hopes for rapid development of extractive industries to boost the Greenland economy were still high as the level of activities continued to rise. In 2012 a consortium of oil companies with exploration licenses in Baffin Bay drilled eleven so-called 'shallow core holes' to evaluate prospectivity in the area. The consortium further undertook extensive seismic exploration and site surveys in the Baffin Bay area in 2012 and 2013. The activities were the most extensive in one area of Greenland to date.

In 2014, the Government of Greenland again presented a new strategy on minerals and hydrocarbon resources (Naalakkersuisut, 2014). This strategy specified selected areas to be announced for licensing offshore West Greenland and onshore Jameson Land on the East coast, new licensing rounds on Disko and West Nuussuaq, two areas in Baffin Bay and two other areas offshore West Greenland. The strategy states in the preamble that:

> "The Government of Greenland wishes to promote the prosperity and welfare of Greenland's society. One way of doing so is to create new income and employment opportunities in the area of mineral resources activities. The Government of Greenland's goal is to further the chances of making a commercially viable oil find." (Naalakkersuisut, 2014: 7)

This way the scene was set with national support and great expectations for the derived benefits from petroleum development.

5. Findings from case sites

Our three case sites can be understood as examples of places where *different* variables and circumstances concerning petroleum are in play, although each orient around experiences of, and strategies for, ontological security through self-governance. In Alaska, the continued ability to access benefits from offshore petroleum developments is important; likewise the role of Shell in the development trajectory of Utqiagvik (Barrow) and the North Slope, and the capacity for continued self-governance in the region based on (Indigenous) Iñupiat values. For the Lofoten, Vesterålen, and Senja region in Northern Norway, the primary concern has for the last decade been whether or not local self-determination and concerns about regional developments oil will be considered important when a final decision on petroleum is taken. For Greenland, self-government issues permeate discussions on extractives, as do the potential for local jobs and the possibility in the North-West – like in Alaska – to maintain traditions and values. As we shall see, all these concerns have been found to influence bottom-up ontological security in the case sites, albeit in different ways.

5.1. Lofoten and the Barents Sea, Norway – the future of Norwegian oil at stake?

In 2008, when we first started investigating the relation between regional development, local responses and potential petroleum development in Lofoten (see Dale, 2011), the sentiments concerning a viable future in the region was dominated by a sense of pessimism. Youth outmigration remained steady, fisheries struggled with economic deficits and recruitment, the tourism industry only barely made a profit, and investments in infrastructure and public services was at a minimum. Even so, more than a third of the population in Lofoten opposed the potential for petroleum development, a comparable proportion to the overall population of Northern Norway at the time[6]. Ten years later, in January 2018, opposition peaked as over 70 percent of the population of Northern Norway opposed drilling.[7]

Norwegian concerns about the potential future income from the petroleum industry had already been discussed for some time, leading to demands for new areas – new frontiers – to be explored for more petroleum to replace the mature fields in the North Sea which are beginning to show signs of depletion. With the price shock of 2014 and the subsequent months, two debates developed: one was a strengthening of the calls for more area for exploration, the other a bourgeoning discourse on alternative trajectories for the future of Norway. Here, the dependency on oil revealed during the oil price crisis was discussed, with the intention of both investigating the level of risk investments in future petroleum extraction entails and seeking out alternatives. Regionally, in the Norwegian Arctic, conversations also shifted from being in tune with national strategic discussions on large-scale industrial processes that would revitalize the north to a debate on how local and regional authorities could ensure that communities and actors were equipped with the tools needed to stay resilient – or, if needed, to change. Our work in the Lofoten region after 2014 reflected these changing circumstances: as national discourse on oil in the north shifted from concerns about regional development to the survival of the nationally dominant petroleum industry, informants in the north would increasingly refer to what they saw as a heightened risk connected to

[3] Greenland Oil Industry Association, 'A summary of the oil & gas exploration history of Greenland' (2016). Accessed 9 November 2016. http://goia.gl/en-us/oilgasingreenland/ history.aspx

[4] Greenland Oil Industry Association op. cit.

[5] Greenland Oil Industry Association op. cit.

[6] From my archive, poll from 2008.

[7] See https://forskning.no/miljo-miljovern-olje-og-gass-samfunn/2018/01/i-nord-norge-er-over-70-prosent-imot-oljeboring-i, accessed March 13., 2018.

petroleum development. This happened not least because of the way in which the sudden drop in prices for oil had revealed a dependency not previously reflected upon. These reflections were not exclusively found among those opposed to petroleum development, proponents also reflected upon how things might now had changed:

> "it's like a paradigm shift (…) In 2013, 78 percent were positive to an impact assessment process, and 11 out of 12 municipalities were onboard. Now with the Paris agreement and everything, there's been a change, and the opposition has done well capitalizing on that."[8]

In a similar way, a mayor in one of the municipalities – who has repeatedly argued for petroleum development over the years – talked to us about how "… we might have missed our chance here (in Lofoten, our addition).[9]

5.2. Alaska – co-ownership and path dependency

The period 2014–2016 saw Shell retracting decade-long investment strategies in Utqiagvik, the North Slope, and the Beaufort-Chukchi Seas. Between fieldwork in the summer of 2015 and in January of 2016, the oil prices had plummeted and Shell had pulled out, leaving a palpable impression in the mood of respondents and the community more broadly.[10] Officially, the reason for Shell's withdrawal was the quality of the well, but the connection with oil prices was highlighted by respondents. The circumstances of Shell's retreat are entangled in the company's long-term engagement with the people of the North Slope. Both the impacts and drivers of Shell's pull-out are multifaceted and to some degree contested, but the reason is not, at least officially, the change in oil prices. To understand the drivers and impact of Shell's disinvestment, consider the nature of Shell's involvement in the North Slope.

Shell had hired a special negotiator (Reiss, 2012) to turn North Slope Borough Mayor Edward Itta's "Hell No" to offshore drilling into support.[11] Shell's strategy in Nigeria and Mexico was to shape the company as an omnipresent organization, supporting everything from primary schools to college degrees, roads, and employment. Shell's wish to do the same on the North Slope found support among planners in Utqiagvik:

> "We go over there and we see the Gulf of Mexico is this south-facing, low-lying swamp with an ocean. It's the mirror image of here but we have snow and ice and permafrost. And they got local people hired, local people working, their own training facilities - and we ask ourselves, 'Why can't we do it as good as those guys?' And needless to say, we're still trying."[12]

Elaborating on the intention to replicate the Shell's partnerships in other locations, the interviewee expresses the hope and disappointment that came with their withdrawal:

> "We created an incredible partnership with Shell that would have, had they found an economic discovery, we would be world famous. The partnership's still alive and the idea that created it is still applicable to other efforts elsewhere. Shell was just the condemnation, I think, of one geologic prospect not the whole idea."[13]

As Shell prepared to drill in 2015, an oil company executive in Anchorage stressed that there were three major risks from their investments in Alaskan offshore petroleum: government permitting, the size of the field, and lawsuits by ENGOs.[14] By comparison, they said, the Norwegian regulatory environment carried lower risk, since once a Norwegian lease was purchased this guaranteed access to drilling. They also described Greenland as a much greater engineering challenge due to fast-moving ice. In general, oil prices were not of concern, since the planning horizon for drilling is multi-decadal and allows for price variations. Nevertheless, Shell's pull-out was met with shock and incredulity when the long-awaited sample apparently contained 'watery slush.' Rumor circulated that the sample looked excellent, and that low oil prices was the real reason, and that Shell's interest might return with a price rebound. Much rested on Shell's presence in the local economy. Commenting on the investments in camps for offshore operations, an interviewee said,

> "I think [that business] went all in early on the game and Shell put their chips on that square and it didn't pay out. I don't know how… that must be a fairly devastating. That's a blow to them."[15]

Expressions of a sense of relief in the retreat of Shell's investments were common, though. In a local restaurant, an elderly local spoke in a clear projected voice about their disappointment with the large influx of non-locals in Utqiagvik, the impact on culture, and the changes to the town itself. They were unhappy with the impacts of the petroleum economy and longed for the community to return to the strengths and self-sufficiency of Iñupiat culture. An interviewee expressed similar sentiment:

> "But if you go to the poorest parts of our state where there's no industry present you'll find sometimes a greater degree of suicide, alcoholism, substance abuse. So this is where people make a nexus that doesn't exist I think that with development comes the ills of the Western world."[16]

Indeed, most interviewees expressed some mixed perspectives on the benefits of the petroleum economy:

> "Our blessing is our curse, which is the one acre field [17] that's responsible for everything else (…) Here's our blessing: the ASRC is a worldwide company… people can grow up here and get a job and live anywhere."[18]

While Shell's exit is an issue, the real problem will come, some argue, when the supply to the Trans-Alaska Pipeline shuts down:

> "We're not affected by the swings in oil price. The only time we'll be affected by this is when we'll be affected by it like a brick wall."[19]

Finally, speaking of the ruination that follows the demise of industry, one interviewee said,

> "I hope I don't live to see the end of the oil industry because I would hate to see them leave our lands wasted, and debris and killing off our fish and caribou."[20]

Elsewhere, Veland (accepted for publication) describes the broader experience of petroleum in Utqiagvik. In particular, the community's ability to maintain self-governance based on Inupiat values is strained by external interests halting deliberative processes through distant courts. Furthermore, the lack of clear economic alternatives is understood as a threat to community institutions and infrastructure. As such,

[8] Lofoten interviewee 2, 2016, our translation.
[9] Lofoten interviewee 1, 2016, our translation
[10] Author 2
[11] DeMarban, Alex. "Mayor Itta: Dwindling Oil Opportunities Force Rethinking of Anti-Development Stance." The Arctic Sounder, February 16th, 2011. http://www.thearcticsounder.com/article/1107mayor_itta_dwindling_oil_opportunities_force, last accessed April 5th 2018.
[12] Alaska Interview 1, 2016
[13] Alaska Interview 1, 2016
[14] Alaska interview 5, 2016
[15] Alaska interview 3, 2016
[16] Alaska interview 1, 2016
[17] The' one acre field' refers to the Dead Horse area where property taxes are levied
[18] Alaska interview 1, 2016
[19] Alaska interview 1. 2016
[20] Alaska interview 4, 2016

the petroleum issue itself does not clearly align with conventional ethnic or political boundaries. Rather, global contestations and negotiations over petroleum reveals a concern for the ability to maintain open, respectful, and deliberative processes over competing futures in Utqiagvik and the North Slope (Veland accepted for publication).

5.3. Greenland: anticipation and disappointment

Before the price drop, residents in the Upernavik district of North-West Greenland, where substansive exploration activities took place in 2012 and 2013, expressed concerns about the potential oil development. People were split in the question of whether development should be seen as a potential for sustainable development or a threat to their opportunity to uphold a desired lifestyle that includes hunting and fishing activities (for further details see Hansen and Larsen, 2013). People talked about the need for changes in relation to livelihood, in order to secure continued existence of the settlements (as described in Hansen and Tejsner, 2018), but whether oil development could offer the change needed was contested and participants expressed general confusion about the potential impacts of such a development.

The politicians in Naalakkersuisut located in the capital of Nuuk (far away from the potential oil activity), on the other hand held great expectations to the potential benefits from oil industry for public revenues and for increased political independence. The Prime Minister in Greenland in 2014, Aleqa Hammond, explained that she expected the extractive industries in Greenland to pave the way for independence within her lifetime[21]. Nationally, most citizens in Greenland agreed, and saw the oil industry as crucial as to what the future would look like for the country.

In a 2013 workshop, stakeholders and students from the University of Greenland identified oil development and education as key determinants shaping the future of Greenland Hansen and Larsen, 2013) and suggested the following scenarios for future development 1) Narlumugaq, ("Suicidal Lemming"): no oil - no education; 2) Tulugaq, ("Smart Raven"): no oil – high education; 3) Nanoq, ("Strong Polar bear"): oil development – high education and 4) Aaveq, ("Lazy Whalrus"): oil development – no education. In contrast to national hydrocarbon strategies for extractive industries focussing on the economic potential in petroleum, the scenario workshop participants rather emphasized societal development goals, stressing that petroleum development could lead to undesired futures if not managed correctly and if efforts to secure Greenland ripple effects failed. The titles of the scenarios, referencing culturally familiar traits, illustrate these concerns. There was however disagreement about which future was preferred, scenario 2 or 3. Still, all agreed that the outcome of the on-going exploration would be crucial to the future of Greenland.

But when the oil prices started to decline, the level of activity in Greenland similarly dropped. First activities were on hold then most operating companies decided to give up their licenses. In January 2015, Berlingske Business reported that the mayor oil companies active on the Greenlandic shelf had returned their licenses and abandoned Greenland, [22] and when energy companies withdrew from Greenland, it had direct economic consequences for the country's economy.[23]

Changes in press coverage were symptomatic for these developments. In 2011 the national newspaper in Greenland started publishing a new magazine titled "*Greenland, Oil and Minerals*". For four years the magazine welcomed the reader with a two-page lookup under the headline "*Oil Drops*" informing about the latest oil and gas activities, but in 2015 the section was renamed "*Mineral Memos*" signaling a general shift from oil to mining. After oil and gas being subject to debates and highly voiced concerns and expectations, a period of silence in the media and the public debate ensued. An early 2015 version of Greenland Oil and Minerals magazine brought an article titled "*The Government of Greenland Buy Time for Oil Companies*", describing how the Naalakkersuisut tried to keep companies active in Greenland waters by expending the time for assessment of licenses. [24] Despite these efforts, the price drop caused a remarkable decline in activities and in June of 2017, the newspaper Sermitsiaq reported – perhaps prematurely - what they called the end of the oil adventure. [25]

During recent fieldwork in the area of Upernavik (Skjervedal, 2018 (in review)), local residents shared insights on their experiences when the industry withdrew and status of their expectations for petroleum development in the area. The general perception was that 'industry came and went, and now things are back to normal'; however, some of the local entrepreneurs had high hopes. A business owner in Upernavik described how the industry had raised great expectations for local development[26]. People in town were disappointed when activities stopped, he stated. Other interviewees explained however that they approved of the industry leaving the area as they saw it as a threat to traditional lifestyles. Even though the price drop on oil in 2014 and the decline in activities caused a shift in the attitude and expectations related to oil development in Greenland, a modest hope remains (Poppel, 2018, in press). In 2018 a new hydrocarbon strategy is being prepared by Naalakkersuisut. A draft is planned to be submitted for public review during the summer of 2018 and the ambitions are significantly moderated compared to the 2014 strategy. Presenting at a seminar on Oil and Gas in Nuuk in 2017 a government official stated that

> *"…to be honest, the 2014 strategy was quite optimistic if you consider how the world looks right now"*[27]

The same government official went on to describe the surrendering of licenses as a new opportunity to get new actors involved:

> *"… as we get access to all the data the former license holding companies on the Westcoast have collected, new opportunities emerge (… we are) keen to get these data out so that we can open for new licensing rounds."*[28]

The offshore blocks abandoned by oil companies thus remains open for new license applications - in a last hope by government that industry might return as oil demand again pushes prices upward. Even though voices arguing that political independence from Denmark can be obtained based on development of oil industry alone have muted, and

[21] Statements from an interview downloaded from https://www.platts.com/latest-news/oil/washington/offshore-oil-production-in-greenland-inevitable-21298456, accessed March 29, 2018.

[22] Berlingske Business, January 14, 2015: "Three major energy companies abandoned the dream of finding oil in the waters west of Greenland, including Norwegian Statoil, French GDF Suez and Danish DONG Energy, who have returned exploration licenses in recognition that it is too expensive and too uncertain to go for the big win "(own translation from Danish)

[23] This included Shell, Danish Maersk Oil and Scottish Cairn Energy. In 2011 alone, the country received 392 million DKK in oil exploration charges, and the loss of these revenues obviously hurt the fragile Greenlandic economy.

[24] In the Week 15 issue, it is written that "…(I)in recognition of the fact that more companies are likely to abandon or have abandoned Greenland, the Government of Greenland has decided to grant all companies an extra two years to assess what to do with their licenses." See http://aviisi.sermitsiaq.ag/stream.php?a=c&p=1448&s=0&l=0&cs=81a43e83dce7d3-fa1b241316d17b36d4, accessed April 5th, 2018

[25] Sermitsiaq, June 7, 2017:" End of the oil adventure The last oil company is out of West Greenland, as the last one has Cairn Energy, which has spent millions on test drilling, closed and shut down in the waters off West Greenland. Thus, only licenses remain in Northeast Greenland".

[26] Interview with Ole Sørensen, Director of Laxøe, Upernavik, May 2017.

[27] Nadja Vedsted Sembach, Head of Licence Department, Greenland Bureau of Minerals and Petroleum, Greenland: Greenland's Hydrocarbon and Mineral Strategy presentation 2017

[28] Nadja Vedsted Sembachm op.cit

[29] See http://www.opec.org/opec_web/en/data_graphs/40.htm, accessed March 9th, 2018.

expectations are more modestly presented by government officials, than before the price drop, oil development still takes up a central place in the discussions about the future opportunities in Greenland. The government, Naalakkersuisut is, also after the 2014 price shock, building future plans of economic growth on the development of extractives, promoting the idea of these industries as a pathway to a sustainable future. Yet a description and plan for how to manage development in a manner that secures a sustainable future remains a mystery unspoken of.

6. Analyzing ontological security, oil and risk perception in Arctic communities

The price drop in 2014 both initiated new and strengthened well-known influences of the oil push northward on community's perceptions of past, present and future ontological security. Our three cases show that as a baseline, the immediate aftershock of the oil price drop – together with the signing of the Paris agreement the year after – serves as a welcome reminder of the way oil ontologies are interpreted as securing (or (*un-securing*) potential futures; it laid open the boom-and-bust nature of extractives and thus weakened the hope for and perception of stability and permanence in an oil driven future. At the same time, the way these incidences rocked the foundations of the oil ontology showed that whether or not there already existed ideas about concrete, reliable and perceivably resilient alternative futures mattered for the potential for discussions about alternative futures. Put bluntly, while the debate in both Alaska and Greenland became almost numbed by the price shock, the debate in Norway showed that the initial discussions about alternatives to the oil ontology that had previously been discussed in academic and environmentalist circles now permeated mainstream political debates and seeped into even the most pro-petroleum of niches: the financial market place.

In debates over the importance of oil in the case regions, the matter was – at least until the 2014 crisis, first and foremost regarded as economical, then technological. Our findings show that – when prices drops, at least – there are other variables at play as well that influence people's perceptions about a future with or without oil. Rarely was oil engaged (at least not critically) as a basis for a world view, an *ontology*. In other words, neither the knowledge derived from specific techno-scientific considerations of possibilities and risks nor the one-sided focus on the economical ripples from the industry gave room for debates about alternatives, nor about other ways of approaching the challenges of climate change and petroleum dependency than to seek to reinterpret and reinvent oil as "part of the solution". This argument – which when this is written (in the spring of 2018) permeates Arctic politics, debates and decision making – shows, then, that these communities are still being steered into a path in which the future is (and continues to be) defined by oil and its manifestations, be it as a way of understanding energy or its manifestations in infrastructure and mental imaginaries about what defines 'value', truth' and 'the good life'; that Arctic oil is part of the solution to the global challenges of climate change and future energy security for all.

For Norway, the debates presented here has added up to a seemingly paradoxical situation: As more and more actors became aware of the way in which Norway is dependent on oil, solutions beyond petroleum were nonetheless discarded by cabinet. As such, the debate itself is contested, and not only the arguments presented. Our findings thus reveal a discrepancy in how this differs on different scales, as developments in the Lofoten region clearly are more in tune with alternative strategies for a viable future: In Norway, as a decision on petroleum now has been postponed for 20 years (from 2001 to 2021), its potential contribution to ontological security in the region has diminished and instead become a source of future *insecurity*. Today even the petroleum industry has, as before reported, changed its argumentation form one where the industry would provide jobs and future income for the region to one where the needs of the industry and for national social security dominates (Kristoffersen and Dale, 2018).

On the North Slope of Alaska, the offshore developments represent a forced compromise where Iñupiat communities are located in the way of risks from offshore developments but will need to negotiate carefully to access the benefits. The fieldwork showed evidence of a careful and watchful coexistence with the oil industry that is wary of both the benefits and risks it presents. Oil ontology remains contested, debated, and carefully negotiated within Utquagvik and the North Slope. The 2014–2016 drop in oil prices and withdrawal of Shell demonstrates the uneasy placement of oil as simultaneously a cornerstone of the economy, and as a considerable risk to both cultural and community resilience and to the marine mammals with which they subsist.

In Greenland, there still a desirable future to be coveted in the oil ontology. During the first decade of the 2000's expectations of oil development rose and fueled dreams of desired futures, without looking further into the future than peak oil and a money flow. Post oil futures were simply not a part of the general discourse in Greenland though disappointment was expressed, feeding insecurity about potential futures. During 2012 and 2013, locals in the Upernavik area, who were exposed to the impacts of exploration, people who made their living from hunting and fishing, did express concerns about the long lasting effects of oil development on fish, whales and other animals subject to local hunt and consumption and thereby the potential threat to desired traditional (and sustainable) livelihoods in the future, also after oil. This was captured as local inputs to the impact assessment processes and addressed as mitigation of impacts on fish, birds and mammals during oil activities, and did not lead to a debate on what potential futures could look like post petroleum in the case of a discovery.

The uncertainty in petroleum prices – and in the investments that are tied to these – shapes how *the future* is imagined by individuals and communities in the Arctic, and thus influences the way potential petroleum development is interpreted and valued. The ontological security in each case is reliant on the ability to take control of their narratives, connecting cultural traditions with current industries, and projecting these securely into the future. In the three cases, the discussion concerning the role of petroleum is heated. The common theme that connects the three Arctic regions in this study is the desire to control the narrative about the past, the present and the future while being stretched between major national, international, and geopolitical players. Industry actors, political decision makers and ENGOs seek support from individuals and organizations within each community, with the effect of straining or challenging their ability to make their own value judgements and decisions matter for decision making. For Greenland and Alaska in particular, the petroleum economy sits strategically at a crossroads between colonialism and self-government. For Northern Norway, the legacy as a forgotten or ignored region by the administrative powers of the south has bearings on local community desire to direct its own future. In each case, there is an expressed effort to secure continuity of culture and community between past, present, and future: that is, to maintain or regain what we here has analytically framed as ontological security concerns.

7. Concluding remarks

In this article we have presented, reviewed and analyzed findings from the ARCTICCHALLENGE project from the following case sites: Lofoten, Norway; Utqiagvik, Alaska; and Upernavik, Greenland. The cases, we argue, serve as microcosms exemplifying the challenge ahead not only for Arctic communities but for global societies as we seek to escape petroleum ontologies. The realization of economic dependency, the goods that come with economic growth, and the accompanying lack of alternatives is as unsettling to these Arctic communities as it is (or should be) for global societies. Under the auspices of global climatic changes, communities in the Arctic and across the world will increasingly need to both adapt and transform. But as the 'Arctic push for oil' seemingly continues, we argue that the scope through which one

imagines future possibilities for these communities narrows – and that these concerns are echoed in local and regional calls for alternative visions and trajectories. Based on this, we suggest that a way to better secure Arctic communities in both near and distant future would be to open for multiple, alternative visions and trajectories, and ensure that decisions concerning extractive activities does not constrain future possibilities. As the era of oil will at some point draw to a close, oil dependent regions will potentially suffer from past choices leading to path dependency and lock-in (Author, in press).

We also argue that the need for relatively small populations to negotiate with large international industry actors and environmental organizations, while navigating the bureaucracies of national and state governments, stresses the ontological security of these regions. To secure continuity from past identity, through present conditions, and into desired futures, communities work to balance the influences from non-local interests. In this process, there is a need to weighing the risks from conservation, extraction, and governance against the risks of losing access to the negotiating table and thereby access to the benefits that may accrue. For Arctic offshore oil in particular, since the jurisdictional authority of marine environments lie with national governments, the risks from oil spills, seismic testing, and potentially large in-migration of workers present real challenges that local communities cannot strictly oppose or protest, since they then potentially miss the chance of contributing constructively to the policy process.

In each of these case sites the future is a contested concept, much due to the fact that movements external to the communities seek influence that challenges the ability to self-govern, be they proponents or opponents to future Arctic drilling. Consequently, multiplicity and shared interests are under-communicated when potential trajectories are concerned in discussions about potential futures, and thus a linear and single framing of future pathways presents an ontological risk for individuals and communities. The three cases show how community members recognize and navigate a lack of control over the main variables influencing whether or not a petroleum future materializes. This reflects the broader concern which indeed has permeated center-periphery dynamics in politics throughout history (and described – with reference precisely to Northern Norway - by Rokkan (1987)) that within nation states, communities in the periphery may often feel at the mercy of national governments and the forceful influence of international corporations. Indeed, as has been argued elsewhere, the security concerns of states can be found to trump those of local communities (Dale, 2011: 81-82). A comparable challenge to local ontological security, therefore, is the common experience of outside actors and stakeholders working to influence local decision making and perceptions of the future. The research here presented has sought to shed light on these problematics, and will hopefully be a part of the mounting evidence about local and regional consequences of continued extraction activities in the Arctic.

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