Emerging post-Arctic tourism in the age of Anthropocene: Case Finnish Lapland

Abstract

Climate change is often considered as a looming apocalypse in the media and its impacts on the cryosphere are increasingly visible in the Arctic region. This apocalyptic future of the Arctic relates to a set of narratives associated with the Anthropocene, wherein snowy landscapes, glaciers and polar bears have disappeared. This has led to a trend called last chance tourism, which has become an evolving economic opportunity for tourism operators and local communities. In this conceptual article we propose an alternative vision for Arctic tourism development referred to as "post-Arctic tourism". In order to illustrate the idea, we utilize Finnish Lapland (Arctic Finland) as an example based on existing literature. It is argued that post-Arctic tourism may be based on so-called dark tourism practices if the used and circulated hegemonic representations of the Arctic remain locked in cryospheric- and traditional winter-based imaginaries. This scenario is supported by a social spatialization process called "Arctification," associated with active attempts to maintain the cryospheric gaze. It is therefore critical for tourism businesses, regions and tourism-dependent communities to rethink and re-invent their Arctic narratives, through "de-Arctification" strategies, allowing for a plurality of tomorrows and for Arctic tourism to become more sustainable and ethical.

1. Introduction

The melting ice of the Polar regions induced by the effects of climate change has triggered dystopian and post-apocalyptic narratives in literature and popular culture like in the movies "Beasts of the Southern Wild" and "Waterworld". The latter movie, for example, begins with an

animated vision of planet Earth, where the viewer witnesses the continents being progressively submerged by the oceans as the Polar ice caps melt. These kinds of images of post-apocalyptic future refer to a set of narratives commonly associated with the Anthropocene (Swyngedouw, 2019), where the impacts of climate change (e.g., acidification of oceans, global warming, thawing cryosphere, sea level rise, etc.) constitute an "inevitable climate apocalypse" (Huijbens, 2021, p. 5). For Bennett (2020, p. 924) this emerging "Anthropocene gaze" frames our environment with images of collapsing societies and ecosystems (see Dirzo et al., 2014). As a result, the Anthropocene has become a buzzword (Castree, 2014) that refers to a new epoch (Crutzen, 2002) wherein "[t]he human imprint on the global environment has now become so large and active that it rivals some of the great forces of Nature in its impact on the functioning of the Earth system" (Steffen, et al., 2011, p. 842).

Recently, the term has gained attention in the social sciences and humanities, and it has become a bridging concept between the Earth system and humanity (Brondizio et al., 2016; Gren & Huijbens, 2014, 2019). According to Castree (2014), the idea of the Anthropocene and related planetary boundaries invite researchers to make foresights, which this paper also aims to do on a conceptual level. However, the projections related to the impacts of the Anthropocene are often challenging as they involve both societal and biophysical elements and their complex interrelations. In the Arctic, for example, this entanglement between the "human" and the "non-human" is expected to be observed through the loss of cryosphere (i.e., the earth's surface that is characterized by the presence of frozen water and seasonal snow/ice cover on land and sea) affecting all regions of the Circumpolar North at various degrees (Meredith et al., 2019). Furthermore, these anthropocenic changes of snow cover, sea-, lake- and river-ice and permafrost are predicted to significantly affect local communities' livelihoods, cultures, identities and economies (Hovelsrud et al., 2011), including small Arctic tourism-dependent communities (Kaján, 2014).

Despite some expected positive outcomes of changes in the Arctic cryosphere for cruise tourism (Lamers et al., 2018), it is generally forecasted that in a long-term perspective climate change and the disappearing cryosphere will have significant negative implications for Arctic tourism (see Demiroglu et al., 2019; Tervo, 2008). Furthermore, climate change is also predicted to affect the "Arctic gaze" (e.g., expected white landscapes), including the associated opportunities to sightsee glaciers or ice-dependent wildlife such as polar bears (Hovelsrud et al., 2011; Palma et al., 2019). These about-to-vanish Arctic elements have become a motivation for some people to visit the region before they are gone, to such an extent that this trend, called last chance tourism (LCT), is expected to become an economic opportunity for local communities (Lundmark et al., 2020). LCT refers to "the desire for tourists to witness vanishing landscapes or seascapes and disappearing species" (Lemelin et al., 2010 p. 477). The "doom" semantic associated with LCT through tourism promotion materials or magazines (e.g., "places you should visit before they disappear forever" or "fascinating places you need to see before it's too late") (see Eijgelaar et al., 2010) clearly embodies the narratives associated with the Anthropocene.

The process of vanishing glaciers and sea ice and the threatened charismatic wildlife and traditional livelihoods advanced by the Anthropocene raise interesting questions about the future of Arctic tourism, in which water and rain is estimated to gradually dominate over ice and snow. What will happen to Arctic tourism when there are no glaciers to sightsee, husky sledges to move on or polar bears and foxes to spot? What would this post-Arctic tourism be and what issues would it involve for tourism stakeholders? This article aims to discuss the future of Arctic tourism by introducing and developing the conceptual idea of post-Arctic tourism. Furthermore, the paper uses Finnish Lapland as an illustrative example, as the region provides an interesting context where we can already observe some previews of Arctic tourism products being challenged due to changes in

seasonality and lack of snow and ice (Varnajot, 2020). Indeed, according to Hall and Saarinen (2021), the on-going climate crisis driven by the Anthropocene sets the agenda for the future of tourism research in the Nordic countries and, therefore, it is critical to evaluate the changes in Arctic environments and their implications for the tourism industry. The next section introduces the idea of post-Arctic tourism in the Anthropocene context, and the following section conflates post-Arctic tourism with the existing concepts of dark tourism and Arctification. The last part discusses post-Arctic tourism in the context of Finnish Lapland.

2. Setting the (Anthropo)scene: post-Arctic tourism

The idea of "post" implies a notion of time, where a new situation, world or system takes place after a disruptive event that is significant enough to alter the conditions of the "pre-event" situation. On the one hand, what is referred to as the pre-event situation relates to the current images, products and experiences of Arctic tourism (Varnajot & Saarinen, 2021). Although the Arctic involves different biomes, political systems, economies, landscapes and cultures (Müller, 2015), contemporary Arctic tourism largely involves images of white, wild, cold and empty of people sceneries, as well as to tourism products and experiences engaging with snow and ice (Nordic Council of Ministers, 2018). On the other hand, a disruptive event refers to a catastrophe or other kinds of disasters, usually depicted as sudden and unexpected, marking a clear distinction between the pre- and the post-event worlds (Nixon, 2011). In this respect, climate change and its future impacts and scale are often considered as a looming apocalypse in public discussions and popular culture (see Anshelm & Hultman, 2014, Methmann & Rothe, 2012).

Rather than being a sudden and unforeseen event, climate change takes place over a much longer process that we are increasingly aware of. Indeed, the climate change apocalypse is slow and

eventually foreseeable. It "occurs gradually and out of sight. [It is] […] a delayed destruction that is dispersed across time and space. [It is] neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales" (Nixon, 2011, p. 2). These kinds of attritional apocalypses have been defined by the United Nations Office for Disaster Risk Reduction (n.d.) as "slow-onset disasters," referring to catastrophes, apocalypses or disasters emerging gradually over time (see Varnajot & Saarinen, 2021). Similarly, Shepherd (2019) discussed "slow catastrophes," citing the drought that Cape Town faced in January 2018. There was a threat that the city would run out of water, triggering post-apocalyptic imaginaries of chaos and of Day-Zero in the global media (Saarinen et al., 2022). Therefore, catastrophes, disasters and apocalypses are not only about events that are instant in time, spectacular in space and with immediate sensational visibility: in the age of the Anthropocene, catastrophes are also characterized by slow processes.

In line with this, "post-Arctic tourism" is grounded in the Anthropocene characterized by slow-onset apocalypses induced by climate change. In this post-apocalyptic Arctic context, the cryosphere has receded, i.e., various physical elements constituting the core of Arctic tourism are gone, or at least rare enough to threaten the sustainability of Arctic tourism (Varnajot & Saarinen, 2021). Indeed, in contrast to a general "post-disaster tourism" (see Liu-Lastres et al., 2020; Tucker et al., 2016), referring to "the development and implementation of strategies and actions to bring the destination back to a normal (pre-event) condition or an improved state" (Mair et al., 2016, p. 2), there is no going back from a post-Arctic future: the snow, ice and polar bears are lost for good. Thus, post-Arctic tourism calls for the need to reinterpret the images and narratives associated with Arctic tourism, rather than factually rebuilding how it was before.

3. Post-Arctic tourism: from dark tourism to Arctification

3.1. Post-Arctic tourism and dark tourism

By definition, all threatened Arctic elements that currently provide LCT opportunities are not gone yet. Indeed, one can still take part in polar bear safaris in Churchill, Canada or in Svalbard (Lemelin, 2006; Viken, 2006), or go hiking on Icelandic glaciers (Welling & Abegg, 2019). If the catchphrase of LCT could be "to see it before it's gone", in post-Arctic tourism, it would however be too late. Nevertheless, it does not mean that this is necessarily the end of Arctic tourism (Varnajot & Saarinen, 2021). On the contrary, sites of catastrophes, whether natural or human-made, are often considered as opportunities for tourism development, particularly through what is termed "dark tourism" (see Rucinska, 2016; Stone, 2013). Dark tourism has even become an "increasingly pervasive feature within the contemporary tourism landscape" (Stone, 2006, p. 145). Tarlow (2005, p. 48), defines dark tourism as "visitations to places where tragedies or historically noteworthy death occurred and that continue to impact our lives". Among these tragedies attracting tourists' interests are, for example, the 2005 Hurricane Katrina (Robbie, 2008), the 9/11 attacks in New York (Potts, 2012) or the 1986 Chernobyl nuclear plant explosion (Stone, 2013). Therefore, post-Arctic tourism gradually emerges along LCT but only becomes a concrete reality after LCT opportunities are gone.

In 2019, a ceremony was held to pay tribute to Okjökull, the first of Iceland's glaciers to disappear due to climate change (see Bennett, 2020; Hall & Saarinen, 2021). Following this "noteworthy death", similar "funerals" were also organized for vanished glaciers in Switzerland (e.g., Pizol), Oregon, USA (e.g., Clark), and in France (e.g., Arriel). Thus, the death and macabre traits traditionally associated with human tragedies were transposed to the loss of more-than-human objects (Árnasson & Hafsteinsson, 2020; Varnajot & Saarinen, 2021; Willox, 2012). This

personification of glaciers is, for example, clearly epitomized in the “Not Ok” movie, realized by anthropologists Cymene Howe and Dominic Boyer (2018), telling the story of “a mountain who has been observing humans for a long time”.

In tourism, glaciers have been prosperous resources for more than three centuries (Duffy, 2007), attracting millions of tourists in recent years (Abrahams et al., 2021; Lemieux et al., 2018; Salim & Ravanel, 2020). Furthermore, they provide water and energy for many populations across the planet (Salim et al., 2021) and they also are dominant features of mountainous and Arctic landscapes to such an extent that they have turned into “sites of powerful sacred and symbolic meanings” for many local communities (Allison, 2015, p. 493; see Gagné et al., 2014). Based on their diverse economic and spiritual roles, it is not surprising that in the Anthropocene glaciers “[have become] endangered species” (Carey, 2007, p. 497) and have been personified through these aforementioned ceremonies. Although not all located in the Arctic, the trend of mourning glaciers seems to be flourishing, which suggests that the personification of vanished Arctic (and non-Arctic) cryospheric elements will most likely characterize post-Arctic, and more generally, future Anthropocene narratives.

While post-Arctic tourism does not have to necessarily be grounded in practices of remembrance and in ruins narratives, the “ruins begin at the end of things” (Stewart, 1996, p. 95). As such, the narratives of ruined futures become deterministic and reductionist as if doomsdays are our only future options. Narratives of ruination speak to an imagined state of loss and overlook the existing state of the Arctic (e.g., polar bears and glaciers are not all gone yet, and they may not all disappear in the future) (see Jackson, 2015). LCT provides a good example of this deterministic and reductionist narrative. The Arctic displayed within LCT narratives is not defined by its current conditions but, rather, through the future absence of the Arctic as we know it. Moreover, there are

reductionist processes that do not support changes in the narratives and imaginaries currently depicting the Arctic, namely the idea of Arctification that has become a characterizing feature in many parts of the (sub-)Arctic and Circumpolar North.

3.2. Post-Arctic tourism and Arctification

Arctic tourism relates to historically constructed representations of the Arctic locked in winter-based imaginaries (Hall & Saarinen, 2010). Nowadays, these representations are increasingly supported by a process called Arctification. It refers to the production of "particular representations of the North among consumers as well as industry and political stakeholders" (Carson, 2020, p. 6). Arctification is further characterized by an intensification of stereotypical winter-based imaginaries of the Arctic and a standardization of tourism products and experiences engaging with snow and ice (Saarinen & Varnajot, 2019) (Table 1). Besides stereotypical images, Arctification in tourism is also driven by language and semantics, particularly through tourism promotion materials producing and reproducing the Arctic (Bohn & Varnajot, 2021; Marjavaara et al., 2022).

Theoretically, Arctification is based on Rob Shields' (1991) conceptual idea of social spatialization, which refers to an ongoing social process producing place identities constructed by socio-economic, cultural and other institutional practices and discourses, in general. Shields sees the production and reproduction of space and place-myths as an active and non-neutral action, as a struggle over representations and social meanings associated with certain kinds of places and spaces, such as the Arctic, the North and what they should be. Indeed, as reminded by Medby (2019, p. 124), "denominations, definitions, and metaphors are all part of conditioning spatial understanding," in general, and specifically in what the Arctic is about. By formulating and conveying ideas, language is directly at the basis of place-making (Tuan, 1991). These conveyed ideas about the Arctic have a

powerful role in place-making by maintaining and "creating new geographical imaginations of the north of Europe as part of the Arctic and consequently new social, economic and political relations of the area" (Müller & Viken, 2017, p. 288). However, the Arctification process with its associated winter- and cryospheric-based representations, narrows down the opportunities for Arctic tourism destinations to reinvent themselves in the context of a warming Arctic. Consequently, Arctification leads to deterministic and reductionist post-Arctic futures grounded in apocalyptic visions and narratives of ruinations.

Against this backdrop, Cooper et al. (2019) suggested "de-Arctification" strategies in order to mitigate Arctification's negative impacts and post-Arctic apocalyptic futures. In line with this, de-Arctification can be understood as a process grounded in more diverse Arctic meanings, based on local communities' perspectives (see Rantala et al., 2019) (Table 1). The process of de-Arctification empowers a more pluralistic post-Arctic tourism future in terms of narratives, as well as a variety of products and experiences that are not all about engaging with snow and ice. In addition, de-Arctification strategies should also take apart the global standardization of tourist activities and experiences observed by Saarinen and Varnajot (2019) in various Arctic tourism destinations. In the end, such strategies are expected to make Arctic tourism more sustainable and to lead to a smarter, more responsible and more ethical post-Arctic tourism.

Process	Narrative	Post-Arctic tourism outcome
Arctification	Winter and cryospheric narratives based on external representations and expectations	Deterministic and reductionist; post-apocalyptic and ruin narratives; Arctic tourism is not economically or socially viable and sustainable; dark tourism is about the macabre
De-Arctification	Diverse meanings and narratives based on local perspectives and worldviews	Plurality of futures; Arctic tourism is smarter, flexible, more responsible and ethical; dark tourism can serve educational purposes

Table 1. Key perspectives on Arctification and de-Arctification in post-Arctic tourism.

4. Discussion: the emerging Anthropocene and post-Arctic tourism in Finnish Lapland

Finnish Lapland is still offering snow, frozen lakes and relatively cold temperatures for tourists to experience. As such, post-Arctic tourism has not yet become a reality in Arctic Finland. However, there are already observable emerging impacts of global climate change, resulting in challenges associated with the Anthropocene and thus, Finnish Lapland offers opportunities to anticipate and better understand what post-Arctic tourism could look like in the future.

4.1. Artificial cryosphere supports Arctic tourism activities

Saarinen and Varnajot's (2019) analysis of tourism products offered under the name "Arctic" in the various parts of the Arctic region demonstrated that Arctic tourism was largely based on the same core activities despite the location in the Arctic region. In Rovaniemi, snowmobiling followed by reindeer-based activities (e.g., reindeer sledding), viewing northern lights, husky dog sledding and ice fishing were the most common tourism products associated with Arctic tourism. They are all products where tourists are engaging with the hegemonic idea of the Arctic. Even viewing northern

lights can be understood as such, since in promotional materials northern lights are often associated with snowy winter sceneries (Herva et al., 2020; Lund, 2016).

In addition, skiing is a common outdoor tourism activity and there are several popular ski resorts across the region, such as Levi and Ylläs with tens of thousands of bed places. In spite of high regional differences in ski resorts' climate change vulnerabilities (see Fang et al., 2021; Saarinen & Tervo, 2006), it becomes clear that the main short-term climate change impact will be the substantial shortening of the ski season. Although it might not impact the ski industry that much (Tervo, 2008), as long as there is snow reliability, which should be supported by increasing snowmaking production (Scott et al., 2020). In Finland, for example, "a preliminary and site-specific impact assessment for two […] resorts has proven them to be relatively snow reliable at least until 2050 by meeting the minimum requirement of 30 cm snow depth for at least 100 days and during the Christmas – New Year breaks per season" (Demiroglu et al., 2019, p. 93). Nevertheless, there is no guarantee of snow during the early parts of the season. For example, both in 2011 and 2015, the opening of the World Cup for slalom skiing traditionally taking place in Levi around mid-November had to be cancelled due to a lack of snow and too-warm temperatures for snow-making machines to be able to produce snow (Nilsen, 2015). In line with this, in a post-Arctic tourism context, the need for the production of artificial snow, along with the development of various techniques, such as snow storage over summer, would most probably increase in order to secure winter-based activities, particularly during shoulder seasons, meaning a significant increase in energy and water consumption (Rixen et al., 2011; Steiger & Mayer, 2008).

Overall, for most Arctic tourism products, there is an evident need for snow and ice, so that these activities can be experienced by tourists. From a long-term perspective, however, the potential lack of snow and ice and the need for tourism actors to develop adaptation strategies might result in

social and economic problems for local communities (Tervo-Kankare et al, 2018). This indicates why it is critical to be proactive in reconsidering what the Arctic is and could involve in the future. However, there is a need for being context sensitive as the apocalypse associated with post-Arctic tourism is a relatively slow process that is not affecting the Circumpolar North uniformly in time and space. Furthermore, different regions, businesses and communities have varying capacities of resilience to adapt and reinvent their Arctic narratives (Brouder & Lundmark, 2013). The economic and environmental costs associated with artificially holding the cryosphere in a post-Arctic tourism context can result in power issues and processes of uneven development, through the creation of enclavic spaces where snow and snow-based tourism development remains available (Varnajot, 2020).

Indeed, the production, storage and spreading of snow requires capital and results in extra costs for businesses and local municipalities that can be compensated via higher taxation and prices for using facilities (see Damm et al., 2014; Tervo-Kankare et al., 2013). In addition, the tourism growth in the Arctic has led some entrepreneurs to develop resorts, like the Republic of Santa Claus (an extravagant project north of Rovaniemi), that should provide all-year-round snowfalls in indoor facilities. Although that particular project uses romantic and entertaining modes of Arctic tourism production, it reveals issues of unequal access to snow.

The potential development of these snow enclaves is based on the Arctification process: attempts to maintain vistas and experiences of a historically created idea of the Arctic (tourism). The dynamics of Arctification are deeply geographical in terms of where the Arctic is located in tourism and how it can be produced. Indeed, the Arctification and the associated images of the past, depicting a white winter wonderland, create a socio-spatial southward expansion of the Arctic in tourism, that is countering the on-going vanishing of the cryosphere in the region. Nowadays, places like Oulu and

Hailuoto (Finland) and Umeå (Sweden), for example, are promoting tourist attractions based on their "Arcticness" (Rantala et al., 2019). This results in a "confrontation" zone where Arctification on the one hand, and the warming Arctic, i.e., the emerging post-Arctic on the other hand, counter each other (Figure 1). This transforming and slowly moving zone of confrontation forms a context in which it becomes increasingly difficult to match and meet tourists' expected experiences based on the Arctic images and the process of Arctification (see Førland et al., 2013; Saarinen, 2014). In addition, the on-going Arctification process creates several negative structural issues in terms of seasonal pressure on resources; changes in labor structures; or vulnerability to "boom and bust" cycles (see Carson, 2020; Rantala et al., 2019), as well as for tourists' satisfaction and intentions to come back (Pestana et al., 2020).

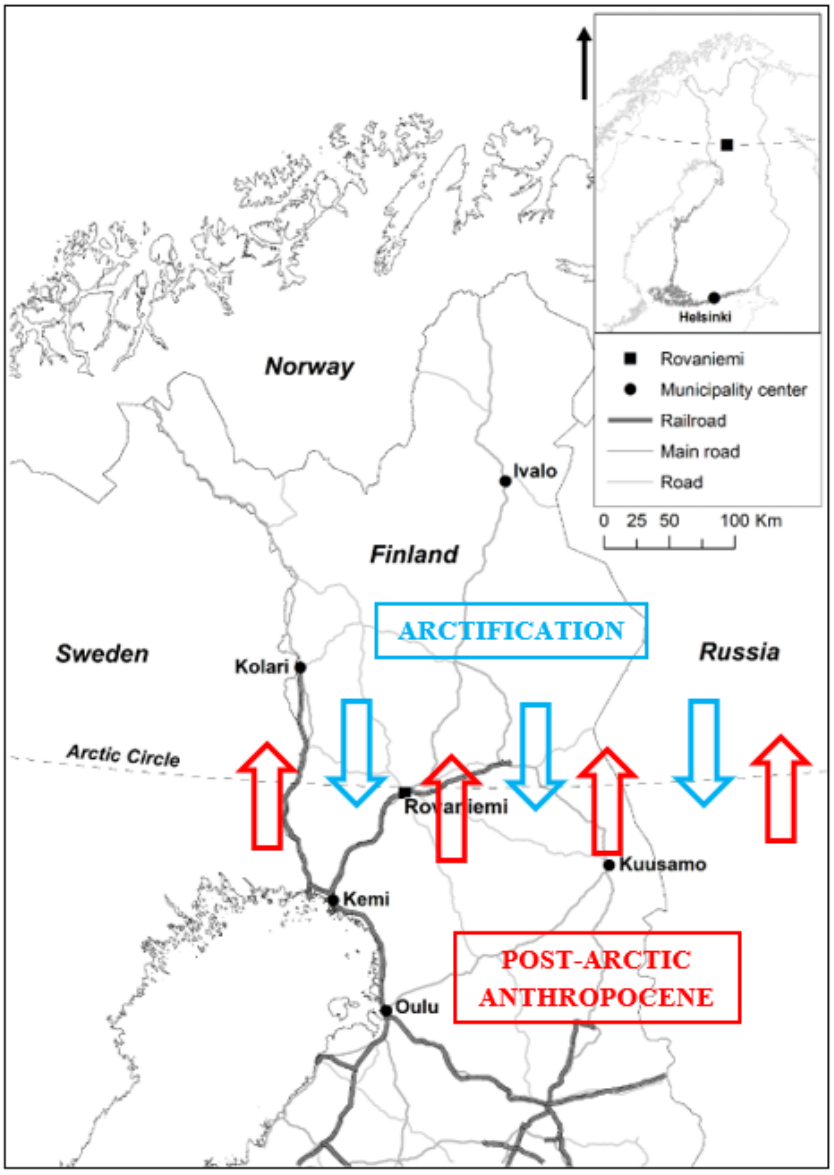

Figure 1. The confrontation zone: the Arctification process countering the on-going warming, i.e. post-Arctic Anthropocene, in Finnish Lapland.

4.2. Challenges in promotion, imaginaries and representations of the Arctic

Although at the moment the factual future conditions of post-Arctic tourism remain relatively hypothetical, Finnish Lapland has recently offered some foretastes of how a snowless early winter season could impact tourists' imaginaries and satisfaction. Pizam and Ellis (1999, p. 327) define satisfaction in tourism as "a psychological concept that involves the feeling of well-being and pleasure that results from obtaining what one hopes for and expects from an appealing product

and/or service". In tourism, satisfaction is critical in the creation of memories, in coming back intentions and in general attitudes towards a destination (Pestana et al., 2020). Furthermore, in the era of social media visitors' satisfaction or dissatisfaction can be crucial for the success of tourism businesses and entire destinations.

Challenges with regard to destination satisfaction were evident in November 2018, at the beginning of the high tourist season in Finnish Lapland. Indeed, the region and especially the Rovaniemi area, the capital of tourism in Lapland, faced a substantial lack of snow and coldness, leading to an unusual "black Lapland". This delayed winter affected the aesthetics of the region that tourists expect to experience when they visit northern Finland at this time of the year. As a result, British tabloids renamed Finnish Lapland as "Crapland", which led to negative publicity for the region among Western European tourists, and especially the British (Varnajot, 2020). Due to high expectations and the thought that snow was guaranteed in Finnish Lapland, visitors were complaining, dispirited and disappointed. Some tour companies even cancelled trips to popular Arctic destinations like Rovaniemi or Levi because of the unusually low level of snow-cover.

Although the Crapland event and some related trip cancellations did not impact the absolute growth of the number of overnight stays by international visitors (Visit Rovaniemi, 2019), it provided a glimpse of the future of tourism in Rovaniemi and of the confrontation zone. Furthermore, although this was probably the most visible sign of the emerging post-Arctic, it was not the first time that the lack of snow in the early winter season resulted in serious problems for the industry (see Kaján et al., 2015; Tervo-Kankare et al., 2013). Based on these past events it is obvious that the presence of the cryosphere is still highly critical for offering a memorable Christmas experience to tourists in the Arctic. In addition to Santa Claus, a white landscape is a main feature of Christmas-themed products (Herva et al., 2020), and if there is limited or missing snow cover it becomes difficult for

Rovaniemi to keep promoting itself as the “Official Hometown of Santa Claus” during the Christmas period.

Indeed, as Tervo-Kankare et al. (2013) showed, 77% of tourists would not have travelled to Rovaniemi if there would be no snow at Christmas, and 63% of them would not have come if snow reliability was poor. Such a situation would become problematic for Rovaniemi from a competition perspective. As Hall (2008) argued, Christmas and Santa Claus tourism are particularly competitive segments within Finland, but also across the Circumpolar North, and the loss of snow in Rovaniemi and Finnish Lapland could be interpreted as a loss of authenticity. Related to this, Hall (2014, p. 23) has critically posed a question: “Will climate change kill Santa Claus?” The answer probably is that it will not, but the emerging post-Arctic environment (as we now know it) may define whether Santa Claus has an office in Rovaniemi or if the Anthropocene will give a temporary advantage to other locations providing Christmas and winter tourism activities with more secured snow-cover in the future.

5. Conclusion

This paper aimed to further develop the conceptual idea of post-Arctic tourism and explore how it conflates with terms often associated with the Anthropocene, such as “apocalypses”, “disasters” and “catastrophes”, as well as the notions of dark tourism and Arctification. These ideas of emerging post-Arctic tourism were discussed in the context of Finnish Lapland’s past and potential future challenges related to a scarce cryosphere due to global climate change’s regional impacts. Climate change is often said to be both an opportunity and a challenge for tourism in the Polar North (Brouder & Lundmark, 2013; Tervo-Kankare et al., 2018). Although this might be true in the short term, in the coming years and decades the future of current Arctic tourism, largely based on the

historically created images of the Arctic and supported by the Arctification process and artificial manipulation of the cryosphere, will be seriously endangered. It is clear that the emerging post-Arctic tourism can already be observed in Finnish Lapland, and there are also other snow-based destinations across the world that are facing much more significant challenges in terms of snow production and reliability. Overall, Arctic destinations can have important roles for future knowledge building as they serve as early indicators and for finding solutions for adaptation and resilience towards sustainable tourism and local development. In this respect, these kinds of early warning sites can provide opportunities "to examine the impacts of climate change, within a context of environmental vulnerability, that could become the future reality for comparatively less-vulnerable resorts and regions" elsewhere (Hoogendoor et al., 2021, p. 93).

All this calls for thinking and developing (a variety of) "tourism in the Arctic" instead of being dependent on a sole idea of "Arctic tourism". In this respect, the idea of post-Arctic tourism may empower us, the industry, and other tourism stakeholders to proactively think about new avenues for tourism development in the region that would be less dependent on cryosphere and the past images of the Arctic. Currently, the various Arctification solutions that socially spatialize the images of cold, snow and ice, or physically maintain a cryosphere on the ground, or to store snow over the summer, have their challenges in terms of marketing ethics, economic costs and sustainability. Furthermore, by focusing on tourism in the Arctic, the emerging dystopic post-Arctic environment based on the Anthropocene could turn into a new Arctic that has a variety of activities, environments, and seasons in the global imaginary of the region as a tourist destination. This variety has always been a reality for the inhabitants of the region. Indeed, the negative aspects of post-Arctic tourism depicted in this paper are not conclusive, rather they aim to constitute a basis for future-oriented thinking by indicating some potential futures if the imaginaries and representations of the Arctic do not change but are dependent on and further maintained by the Arctification

process and dark tourism approaches. Thus, the idea of post-Arctic tourism aims to offer fruitful grounds for anticipating a various range of possible tomorrows that would lead the tourism industry in the Arctic towards more sustainable practices and forms in the future.

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