



The Interplay between Science and Tourism Practices:

The Cases of Research Town Ny-Ålesund and the SEES Cruise in Svalbard

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Abstract

Over the last few years, there has been an increase in the amount of expedition cruises in Polar regions. These expedition cruises have landings in areas where science is already an important sector. This often means that the tourism and science sector need to co-exist. Literature shows that there is a symbiotic relationship between science and tourism in Svalbard. This thesis explores the increasingly occurring relationship between tourism and science in the Arctic by focusing on two cases in Svalbard. Research town Ny-Ålesund in Spitsbergen, as the first case of this paper, displayed the interplay between the expedition cruise tourism and scientific activities. This interplay is analysed by using social practice theory as a framework. The social practices and their links are discovered by qualitative research. As a second case study, the Scientific Expedition Edgeøya Spitsbergen (SEES) in 2015 was studied. A combination of secondary and primary data revealed the connections between the social practices of science and tourism in these two cases. This research shows that the interdependent relationship between science and tourism in Svalbard differs on its context. In the case of Ny-Ålesund, science and tourism appear to co-exist and their social practices are managed in such a way that they can function efficiently. Different findings were done for the SEES cruise, where there was more interdependency between the social practices of science and tourism found. The extent to which the social practices were interdependent seemed to depend on the shared meanings of the people involved with the practices. Moreover, a new practice-as-performance based on the elements of existing social practices seems to be created in this context. The results suggest that more research on the overlapping practices of science and tourism in polar areas is needed in order to fully understand their interplay and the way they could be managed to their full potential.

Key words: social practice theory, science, expedition cruise tourism, SEES cruise, boundary work

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1. Introduction

In the past ten years, cruise tourism in polar areas has been increasingly in demand. More and more experienced tourists desire to travel to unique places and discover pristine destinations. This leads to an increase in the amount of people that visit the North and South pole (Van Bets, Lamers & van Tatenhove, 2017). Not only do tourists visit the polar areas by plane or car, there are also alternative and relatively ways to discover these remote areas. One way to visit the Arctic, which is growing in its popularity, is expedition cruising. In contrast to normal cruises, an expedition cruise allows tourists to visit a certain area for just a few hours. Expedition cruises enable tourists to visit pristine polar areas that are difficult or impossible to reach by plane, train or car. Unlike normal cruise ships, expedition cruise vessels do not dock, but they let the tourists reach land with rubber boats, called Zodiacs. These boats allow for flexibility as they can land on remote beaches, deal with the harsh climate as well as are hazard resistant. Tourists can leave the cruise vessels for a limited amount of time to discover the area accompanied by the tour guides.

Some of the locations that are visited by the expedition cruise tourists are inhabited by communities that benefit from the tourists by selling products. However, the expedition cruise vessels also visit areas that are more remote and where people only visit for research purposes. These are research communities. In those research areas, often only research stations are based, where researchers aim to study the natural conditions of the area. Research does not only take place in these research areas, also on the expedition vessel itself research is often conducted. Moreover, an important feature of expedition cruises is that the tour guides are not only experienced guides in the tourism field, but they are also trained to understand and control the ecological situation and changes in the polar environment (Walker & Moskado, 2006). They are often asked to do observations of the ecological situations they observe along the way. This is a good example of how science and expedition cruise tourism are increasingly interdependent and that they co-exist in multiple situations.

The expedition cruise vessels bring tourists to several sites in polar areas. One of the most popular expedition cruise stops in the Arctic is Ny-Ålesund. Ny-Ålesund is a small research town in the western part of the Island Spitsbergen in the archipelago of Svalbard. This former miners' town nowadays is an important site for research in the Arctic. Ny-Ålesund has sixteen permanent research stations (Kings Bay, n.d.). These stations are owned by ten different countries. Besides the permanent stations, other institutions and nations also visit the area on a regular basis to do research. In order to be able to conduct research and preserve the environment, there are many rules the scientists and visitors have to obey (Kings Bay, n.d.). Managing tourist flows and scientific activities in Ny-Ålesund can be challenging, because the motives and behaviours of the visitors are different from those of the researchers. Tourists, who often leave litter and leave pathways, could affect the natural behaviour of flora and fauna in the area. Subsequently, the tourists may influence the research in a negative way, disturbing their research projects. This could lead to undesired friction between tourism and science sectors. Therefore, strict regulations and local governance are of great importance in this area in order for tourism and science to co-exist (Viken, 2011).

As more and more research will have to be done in the coming years in order to fully understand the ecological changes of the polar areas and expedition cruise tourism is growing, the two sectors are likely to co-exist and to be intertwined even more in the future. In order to ensure that both practices can take place, it is important to grasp how these two sectors can be managed in such a way that both can function efficiently, even if they influence each other. Therefore, research focusing on the interdependent relationship between the practices of science and expedition cruise tourism is needed. Even though the relationship between science and tourism seems to become a common phenomenon, in Svalbard it has not been properly studied yet. In 2011, Viken argued that there is a symbiotic relationship between tourism, research and governance in Svalbard. This means that the tourism and science sectors are to some extent interdependent. However, literature research has shown that the relationship and possible interplay between tourism and research specifically has not been researched yet in detail. The way this relationship takes place might not always be the same. More in-depth study on the social practices of tourism and science in Svalbard can reveal important structures that have not been discovered before and add to the knowledge about expedition cruise tourism and science in polar areas in general.

Research Questions and Objectives

This research aims to explore the relationship between tourism and science practices in polar areas. Moreover, it aims to bridge the research gap that exists in the research about the relationship between expedition cruise tourism and science. This research adds detailed insight on how these two sectors co-exist, as the relationship between science and tourism might not be the same in different contexts. In order to study this relationship in two different contexts, this research includes two case studies in which tourism and science are co-existing in and around Spitsbergen. Studying this relationship in two different cases can provide different insights on how tourism and science are related and whether they are somehow different in different Arctic environments. Both cases are located in and around Svalbard and display a relationship between science and tourism practices. However, the two cases are different in terms of geographical and social contexts. This makes them interesting to compare, as it could influence the relationship between science and tourism and might provide different outcomes.

Based on a framework and relevant literature, research questions were formulated. The main research question of this thesis is *“How is the interplay between touristic and scientific activities managed in Svalbard?”*

The following secondary questions will be discovered:

- *“What constitutes science and tourism practices and how do they relate?”*
- *“To what extent do the social practices of science and tourism in Svalbard mutually influence and re-shape each other?”*
- *“What are the managerial implications of the relationship between science and expedition cruise tourism in Svalbard?”*

Finding out more about the science and tourism practices in Svalbard or in other polar areas in the world would be a relevant contribution to academic literature. Moreover, it could provide new practical insights on the management implications of the social practices of tourism and science in Svalbard. Furthermore, it might generate useful information about expedition cruise landings and science activities in polar areas in general.

2. Conceptual Framework

2.1 Boundary work

Due to the fact that science and tourism are overlapping both on the expedition cruise vessels as well as in the town of Ny-Ålesund, it seems that there is a situation taking place in which people need to work on the boundaries of both activities. The situation on the expedition cruise vessels, in which guides are also researchers is a good example of boundary work. Boundary work can be described as the work that is being conducted by people who are working in several sectors at the same time, and who work on the “boundary” of those sectors. According to Gieryn (1983), boundary work describes “an ideological style found in scientists’ attempt to create a public image for science by contrasting it favourably to non-scientific intellectual or technical activities”. This could be the same for the researchers in Ny-Ålesund in Svalbard, in the sense that the scientists that work there would create a way in which their research could be displayed in a way that people will understand. Currently, tourism and science activities overlap in Ny-Ålesund, as tourists visit the area while researchers try to conduct research. Rules and regulations are required in order to manage all these activities. One could speculate that researchers need to adapt to the tourists that visit, as well as the other way around. Whereas researchers might need to display some of their research activities to the tourists, the tourists need to obey several rules. The overlap could be considered to be some kind of “front stage” in which parts of the actual practice are being performed in cooperation with the other practice. The adaptation and re-shaping of both these practices could be located in this overlap. It can be questioned whether the practices influence each other outside this overlapping area as well. Boundary work theory can help explain the overlap between the social practices of tourism and science.

2.2 Social Practice Theory

Schatzki (2012) describes a social practice as “an organised constellation of different people’s activities”. Social practice theory focuses on the group behaviours of people within society, rather than on the psychological behaviour of individuals. These group behaviours have a routinized character and take place in a certain context. According to Shove and Pantzar (2005), a social practice consists of interdependent relations between material, competences and meanings (figure 1). These elements cover the knowledge that exists about a practice, the motives that people related to the practice have and the material attributes that are needed.

In 2011, Shove et al. showed that a social practice can only exist when all three elements in the element model are linked together. The links between the elements are just as important as the elements themselves and the different elements are interdependent. This means that the meaning, materials and competences should be linked in order to actually create an activity that can be considered to be a social practice. Take the social practice of soccer for example. Soccer would not be a social practice if people did not use the ball, and if the knowledge of kicking the ball around would not be there. Without this knowledge, the competence would be missing and people would not know be able to join the social practice of soccer as there would not be any rules set out. Moreover, if people would not connect a meaning and understanding to it, it would not be a social practice but merely a combination of objects or materials. In the case of soccer, meanings could include exercising to improve health, gaining social benefits, as well as seeing soccer as a form of art.

Shove et al. state that once a social practice has come to exist, it can also disappear again. The authors also argue that links between the elements can be broken, resulting in what the authors call an “ex-practice”. This means the elements could still exist, but they would not be connected to the other elements anymore. This process of connections between elements disappearing is called “de-formation”. The other way around, when links between elements are being made it is called “formation”.

Maintaining existing linkages and practices can be a challenge too. In the case of Ny-Ålesund this might be relevant as scientific practices take place here, while there is a growing expedition cruise tourism sector. Continuing the existing scientific practices could be a challenge with a booming tourism sector that might interfere with the current situation. Maintaining the elements of science and tourism as they are could be a challenge. Elements are constantly changing over time. Subsequently, practices also change, due to the fact that their meanings, materials and competences evolve. Therefore, social practices are not static, but they are transformative. Shove et al. stress that the elements are interdependent and continuously re-shape each other. Through a “process of integration” the three elements constantly change each other as well as the overall social practice. Moreover, the authors also differentiate between two types of social practices; practices-as-performances and practices-as-entities. Practices-as-performances are established when a practice is being performed and the practices-as-entities are established when a social practice becomes identifiable as an entity. An example of a practice-as-performance is any type of dance. Salsa for instance, can only exist once it is performed by dancers who know the dance moves.

Considering the symbiotic relationship between science and tourism, as researched by Viken (2011), it is needed to focus on the way social practices relate to each other in Svalbard in different cases.

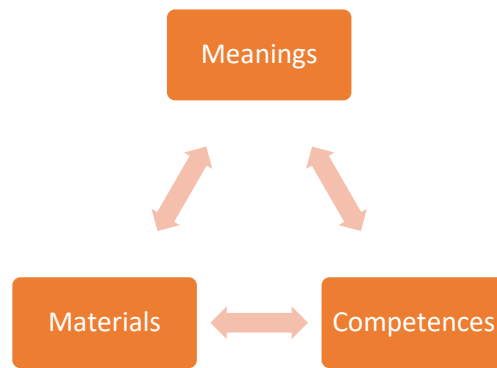


Figure 1. Elements of a social practice (Shove & Pantzar, 2005)

Based on social practice theory and boundary work theory, a conceptual framework is made. There might be an overlap between the practices of science and tourism, which might cause them to constantly re-shape each other as social practices do. This overlap, which takes place for example when tourists are present within a research setting, and the social practices are displayed in figure 2. The overlap could be considered to be the boundary between science and tourism sectors, in which boundary workers are active. However, it is not clear to what extent this overlap exists in both of the cases that are explored in this research and how it is established. This model portrays the symbiotic relationship as it appears from literature. It will be used to identify and understand the practices of science and tourism in polar towns that are landing sites for expedition cruises. Focussing on the overlap and the boundaries between these practices could show how they are related to each other. Thereafter, it is possible to see what managerial implications exist for the symbiotic relationship that seems to exist in the two cases.

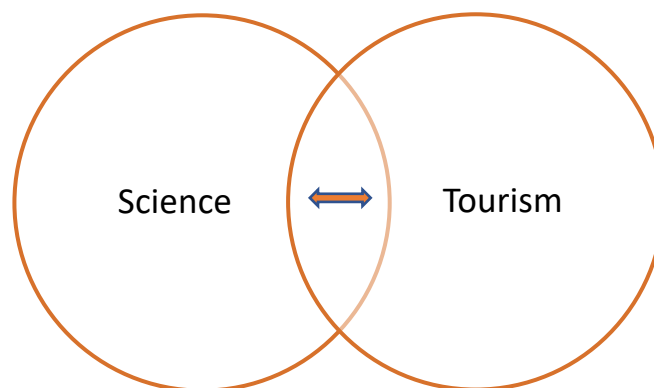


Figure 2. Social practices of tourism & science and their overlap

3. Methods

3.1 Research Design

In order to study the relationship between science and expedition cruise tourism more extensively, this research ought to compare two cases in which this relationship takes place. Even though both of the cases are geographically located in the Arctic, the social and environmental contexts of both cases are quite different. Therefore, this research might show different outcomes. Both cases will be compared to see whether the relationship between science and tourism is similar in different scenarios and throughout the Arctic.

The case of Ny-Ålesund is especially interesting and was selected for this research, because this research community is a well-known port for many of the cruise ships that go around the Arctic, and therefore, it has to deal with both the scientists who are currently working there as with tourists who temporarily leave the cruise ships to discover the area. In many cruise ship destinations, the research community both benefits from and clashes with the tourists who visit their village for a certain amount of time. However, this is not the case in Ny-Ålesund, where research is the main interest and there is not a societal community. The way the tourists influence the local activities, therefore, is probably quite different from the aforementioned situation with different types of cruises. In the case of Ny-Ålesund, the model in figure 2 seems relevant, as it displays how both the practices of science and tourism co-exist, while there is also a small overlap.

Science and tourism activities do not only take place in research areas. They might also co-exist in different contexts in the Arctic. In 2015, in cooperation with tour organizations, several researchers organized an expedition cruise that combined science and tourism activities, called the Scientific Expedition Edgeøya Spitsbergen (SEES) cruise. During this expedition cruise groups of tourists, scientists and a media crew were aboard. This is a rather unique combination, as touristic and scientific expeditions are usually separated. In 2017, Lamers et al. analysed the ten days SEES expedition. Aboard this tourist vessel were amongst others approximately fifty tourists, fifty researchers and a media crew. The social practices of these groups and their connections were analysed using social practice theory. This theory can explain the activities of science and tourism based on their core elements and linkages. Lamers et al. (2017) showed the practicality of applying practice theory to touristic practices, which is why this approach seems relevant for this thesis which aims to see tourism and science in Ny-Ålesund as social practices as well.

The second case this research will explore focuses on the SEES expedition. This expedition cruise took place on the 19th until the 28th of August in 2015 and is a relatively new concept in the Arctic expedition cruise industry. The cruise started in the harbour of Longyearbyen and reached its destination Edgeøya after a few days. What makes this cruise unique is the composition of its passengers. Aboard the tourist vessel named the "Ortelius" were approximately fifty researchers, fifty tourists and ten media representatives (SEES, n.d.). This combination of both researchers and tourists is a new concept in the Arctic expedition cruise sector. Each different group had their own objectives and goals, but the overall goal of this cruise was to gain new insights in the consequences of human activity in the polar area

by conducting research with Dutch researchers. This particular case was chosen for this study as it displays a relatively unique situation in which science and tourism interact and it might differ from a case as Ny-Ålesund.

3.2 Data Collection

In order to achieve the research objective of this paper, several steps were taken. First of all, extensive literary research was done, which led to a literature review that discusses relevant existing theories concerning practice theory and boundary work. Studying the concepts of tourism, science and their practices using a theoretical framework can help to understand the underlying processes and practices of science and tourism in Ny-Ålesund.

In order to research the cases of Ny-Ålesund and the SEES cruise, several steps were taken. Social practice theory, as the most important theory of the conceptual framework of this thesis was used to identify the practices of science and tourism in both cases as the first step into answering the main research question. This research is based on qualitative data. This type of data can provide in-depth information about important social factors, such as meanings and competences of the people who are involved with the social practices of science and tourism. Both secondary data and primary data was used. The secondary data comes from interviews that were done by M. Lamers and L. Van Bets in 2017 during the first SEES cruise and fieldwork in Ny-Ålesund with stakeholders of both cases. A data base with twenty-six interviews, which were conducted for several research projects with different objectives concerning Svalbard and the SEES cruise, as well as additional qualitative data was provided for this research. Additional interviews with stakeholders of both cases were done in order to make sure that any possible changes that took place were accounted for in the data. This sample includes researchers, tour guides and the station manager of the Dutch research station. These interviews provided data about how the current situation with scientific and touristic activities are management in Ny-Ålesund. This information will help to identify the meanings, competences and materials that make up these social practices in Ny-Ålesund. Once the social practices of science and tourism in Ny-Ålesund and during the SEES cruise are identified and analysed with the conceptual framework, it is possible to research whether they are indeed symbiotic or whether they possible clash to some extent. In the case of the SEES cruise, a brief questionnaire was sent to tourists who joined the cruise to get an overview of their perception of this unique event. The questions focused mainly on tourists' opinions on the cruise's composition of tourists, researchers and a media crew. There were twenty-four responses to these questions that were taken into account during the analysis.

3.3 Data Analysis

The data was analysed in its original language, which was Dutch and English, and the results were written in English. The data was analysed using both deductive and inductive analyses, with the conceptual framework based on social practice theory and boundary in mind. First of

all, it was scanned for any re-occurring themes and then those themes were coded and put under categories. The categories in table 1 were based on the conceptual framework and derived from the content analyses and will be explained in the following chapters.

Categories		
Regulations	Management/organization	Researchers
Tourists	Expedition cruise tourism	Media outreach
Meanings	Materials	Competences
Relationship researchers & tourists	Relationship researchers & guides	Boundary work

Table 1. Categories based on framework

In the discussion section of this paper, the two cases will be compared and any possible differences between the interplays between tourism and science will be highlighted. This might give new insights on how scientific and touristic activities are related in different contexts. Moreover, recommendations for future research will be provided. Finally, the paper finishes with an overarching conclusion.

4. Results

In order to discover how tourism and science are related to each other and how this might differ in different contexts, the results for the two cases are reported separately.

4.1 The Case of Ny-Ålesund

4.1.1 Science Practices in Ny-Ålesund

The aforementioned categories provide an overview of the situation of the current science practices in Ny-Ålesund. Concerning local management, data shows that in this community science is the first and foremost goal. There are sixteen research stations owned by ten different countries all over the world. Kings Bay is the company that regulates all of the research stations and most of the facilities and services are arranged and paid by Kings Bay. The Ny-Ålesund Science Managers Committee (Ny-SMAC) is a committee that boosts the cooperation between scientists and makes sure research takes place in a sustainable and efficient way in Ny-Ålesund (Ny-Ålesund Science Managers Committee, n.d.). The research community has facilities, such as a restaurant with catering where all researchers come together. Conducting research in Ny-Ålesund can be a challenge at times, because researchers are often bound to the weather conditions and the harsh climate. Another reason why doing research in this town is not easy is the financial burden that comes along with it. Even though many services are financed by the Norwegian government, research stations and researchers themselves need to invest large amounts of money in order to be able to carry out their research, make use of the facilities and stay in the town. It is partly because of these reasons

that researchers want to carry out their research as efficient as possible. This portrays part of the meaning of the activity of conducting research according to the scientists. Conducting research seems to entail that researchers can study the environment as efficient as possible, without their subject of study being influenced by external factors. Therefore, this means that many researchers do not wish to be disturbed by tourists. However, some researchers are more open than others for networking with tourists and guides. Researchers are in contact with researchers from other stations, but some also have connections with tour guides who visit the community.

4.1.2 Expedition Cruise Tourism Practices in Ny-Ålesund

Data shows that expedition cruise tourism in Ny-Ålesund is quite different from tourism in other tourist destinations. First of all, in many tourist destinations people stay the overnight in a local accommodation, while in Ny-Ålesund this is not the case. Tourists arrive by Zodiacs, which are little rubber boats, that come from the expedition cruise ships. There are regulations for the tourism sector that are supposed to protect the research community. In contrast to other cruise destinations, Ny-Ålesund is not open to as much tourists as possible. In terms of tourism development, Ny-Ålesund does not aim to develop tourism locally. Tourism has financial benefits, but if it would develop locally or grow significantly, it could have negative effects on the research activities. Nevertheless, there are some facilities that are aimed at the tourists specifically. These tourists facilities include a shop and a visitor centre. Signs are provided along the paths, but there is nobody who guides the tourists around in Ny-Ålesund except for the guides that belong to the cruise company themselves and that need to join the tourists. Cruise vessels need to bring their own guards that keep the tourists from walking in the way in Ny-Ålesund and provide guides themselves. There is no official local contribution to the tourism activities that take place in the town, apart from the fact that some facilities were provided.

To a certain extent tourism in Ny-Ålesund is regulated by Sysselmannen, the governor of Svalbard. Over the years, regulations concerning tourism have become stricter. Since 2007, Heavy fuel oil vessels are forbidden to land in Ny-Ålesund (Governor of Svalbard, 2014). Most of the vessels that run on heavy fuel oil have a large passenger capacity and by enforcing this law, vessels with a large number of tourists aboard are no longer allowed to land in Ny-Ålesund. Sysselmannen control the vessels that want to land in Ny-Ålesund and they need to obey their rules and pay a fee in order to be able to land. These regulations are supposed to protect the research activities from the tourists and protect the environment. Besides the rules created by Sysselmannen that are applicable to the entirety of Spitsbergen, everyone who visits Ny-Ålesund needs to follow the general local rules created by Kings Bay. For example, all wireless equipment has to be turned off during each visit. Visitors also are forbidden to visit scientific reserves (Kings Bay, n.d.). These rules mostly seem to aim for protecting the scientific activities and nature rather than facilitating tourism activities.

4.1.3 Relationship between Practices in Ny-Ålesund

Interviews with researchers who regularly conduct research in Ny-Ålesund show that researchers are not really bothered by the tourism activities that take place in the town. However, they wish not to be disturbed by tourists during their actual data collection, as conducting research in the Arctic is very expensive and often weather bound. Some researchers try to avoid the tourists when they arrive. An example of this from an interview with the Dutch research station manager (personal communication, May 28, 2018): “It is the case that when cruise vessels arrive in Ny-Ålesund, that us, scientists tend to hide ourselves sometimes”. This quote shows that even though researchers claim to accept the arrival of tourists, they prefer not to have too much contact. This is not the case for every researcher though. Some researchers are in contact with tourist guides and share information with them whenever they visit. Some researchers do talk to tourists who walk around the town and join the cruise vessel for a few hours to give a brief lecture about their research. The scientists seem to be aware of the financial benefits of tourism, but do not wish for tourism to develop further locally as it might pose a threat to their research projects.

4.2 The Case of the SEES Cruise

4.2.1 Science Practices

One of the main reasons this expedition cruise was organized was to conduct research with Dutch researchers in an area that had been researched before by Dutch scientists many years ago. According to the researchers, as a positive side effect was that there was also a lot of media outreach. Aboard the *Ortelius*, a tourist vessel, were approximately 50 tourists and 50 researchers with different backgrounds and fields of research, including amongst others social scientists, natural scientists, archaeologists and marine biologists. Their main reason for joining the expedition, which contributes to the meaning they attached to the cruise, was to conduct research in areas where research lastly had been done in 1977 which was documented quite well. There is a lot of research being done on the West parts of Svalbard, but the East of the Arctic ocean and the little islands seem to receive less scientific attention, which can be considered a scientific loss.

Since a tourist vessel was chosen for the SEES cruise and researchers who wanted to conduct research during the cruise were aboard the ship, the staff had to come up with ways in which the scientific and touristic activities could be combined. Data shows that researchers were willing to let tourists participate with their research activities. An example of this was the collection of insect samples. Tourists who were willing to help the scientists received a little container, in which they were supposed to catch insects. In this way, both the researchers and tourist were benefitting, as the researchers had less work with gathering their many samples and the tourists were entertained as well as educated by being part of the research activities during the expedition cruise.

4.2.2 Tourism Practices

Part of what gives the expedition cruising its meaning is the fact that the ship allows people to visit remote places that could not be visited during a general cruise. This meaning, which is connected to expedition cruise tourism, might differ from the meaning connected to general cruises. Moreover, there are different materials included in the expedition cruise. For the social practice of expedition cruise tourism one thing that is needed for sure is the expedition vessel. Without the cruise ship, there would not be any cruising at all. Aboard expedition cruise vessels are the zodiac boats, which allow people to do landings and visit the mainland. What gives the SEES cruise its unique character is the composition of the travellers, which consists of tourists, scientists and a media crew. Those who were in charge of the organization of the cruise constantly had to keep the wishes of tourists, researchers and media crew in mind. Whenever it was possible, the organizational crew tried to combine the different groups and their activities. Since researchers made up a big part of the group of passengers aboard this tourist vessel and they wanted to do research at places where tourists normally are not allowed to go, sometimes the groups had to be separated. Some researchers also functioned as tour guides in order to enable the researchers to visit every area they desired.

During the cruise, tourists were encouraged to help the scientists conducting research by performing little tasks that would generate data. Tourists were very eager to help and catching the insects might have contributed to their overall tourist experience during the expedition cruise. In the ne tourist stated that “the participation of tourists with for example collecting data is a good initiative and it increases the involvement of participants and the amount of data” (Personal communication, . This data, which was generated from the email questions, shows that overall tourists were satisfied with the SEES cruise. Responses by a sample of twenty-four tourists showed that the tourists were very much aware of the fact that Dutch scientists would be aboard the vessel. These results show what the meaning and purpose behind the expedition was according to the tourists and show what elements are involved with this social practice. The presence of the scientists was seen as a positive addition to the cruise and added to the overall experience of the tourists who joined the cruise. Most tourists would recommend Oceanwide expeditions to organize more tourism-science expedition cruises in the future. However, there were also some remarks and recommendations for a future SEES cruise. Some tourists did experience a few small inconveniences. The concept of the cruise itself was very much appraised, but the communication between the cruise organization Oceanwide expeditions, the SEES organization and the tourists was lacking according to some tourists. Furthermore, at some point during the cruise, some tourists experienced that they came in second place after the tourists during the cruise.

It should be considered that there were not just tourists and researchers aboard this vessel, but there was also a media crew. Therefore, besides the science and tourism practices, there were also media practices. Interviews with researchers were done and they filmed clips of the expedition for the Dutch news.

4.2.3 Interplay between Social Practices & Managerial Implications

Due to the fact that a tourist vessel was chosen for this expedition and tourists had to be present in order to be able to financially realise the expedition, the social practices of science and tourism overlapped at many points during the journey. Aboard the vessel, researchers, tourists and media enjoyed their meals together and every night a general meeting was organized during which researchers discussed their progress. They were also welcome to share their ideas and tourists were able to ask questions if they wanted to. The relationships between researchers and tourists were also analysed in the data. One of the guides aboard the *Ortelius*, who is also a researcher, noticed that during the cruise the different groups of people increasingly started to communicate as time passed by. This happened both during leisure activities as well as during research activities. During their data collection, many researchers welcomed the voluntary help from the tourists. This happened for example when one of the researchers needed to catch insects. The tourists who wanted to help received a little tube in which they were supposed to catch insects that saw. The contribution of the tourists caused there to be less work for the researchers in terms of data collection, and the tourists enjoyed the activity of collecting data as well.

Due to the fact that there were tourists as well as scientists aboard the *Ortelius*, different regulations were in place. The cruise vessel itself had to obey to the tourism regulations, but for the researchers there were other rules and regulations. For example, guides are not allowed to walk on glaciers, but some scientists wanted to collect data on a glacier during the cruise. The researchers were also not authorized to walk on the glacier by themselves. One of the researchers, who also works as a guide partly, was able to guide the researchers. This is one of the situations in which it seems that we can speak of boundary work. These were situations in which people who work in both the tourism and science sectors at the same time were able to switch to whatever role was needed for the occasion. It was at these moments, that it was difficult for the organization of the cruise to find ways to ensure that both the tourists and the researchers were able to continue their activities. The organization of the cruise had to find ways in which they were able to follow both the regulations for tourism as well as science, whilst still being able to perform both activities. According to one interviewee who was part of the organization of the cruise this was a “juridically strange construction, because the university does not have any tour guides, but this meant that we were able to do things that we otherwise would not have been able to do” (Personal communication, May 17, 2018).

As mentioned before, the scientists also involved tourists with their data collection. Whenever the researchers were not collecting data, the organization of the cruise made sure that the scientists joined the research groups with their touristic activities.

5. Discussion

In this chapter, the results of the analyses will be discussed and the secondary research questions will be answered. Thereafter, it is possible to answer the main research question and discover how touristic and scientific activities in Ny-Ålesund and during the SEES cruise influence each other and what the implications for management exist in Ny-Ålesund.

Moreover, the most remarkable findings of this research will be mentioned and interpreted in light of what was already known about the relationship between the social practices of science and tourism in Svalbard in existing literature.

5.1 The Social Practices of Science and Tourism

Before applying social practice theory to the cases of Ny-Ålesund and the SEES cruise and discovering the links, it is needed to determine what constitutes the social practices of science and expedition cruise tourism. With the element model of Shove, Pantzar the main elements that make up the social practice of science can be described, but more importantly, the way these different elements are connected to each other and how they combined make up a practice can be discovered. In the case of science activities, three elements need to be identified. Considering the element model for social practices by Shove et al. (2011), science seems to be constituted whenever there are skills and the needed materials involved. The meaning of conducting research is essential for the social practice of science to exist. This only exist if people have the shared meaning of discovering new elements and progress. These elements need to be linked in order for the social practice to be performed. In Ny-Ålesund the materials that are needed are the research stations, facilities and tools that are used by the individual scientists. The meaning of social practice of science is based on creating knowledge and discovering new facts about a certain topic. If the meaning of the social practice of science was not linked to its competences and materials, Ny-Ålesund would not be a properly functioning research community. Without the materials, the stations and the tools, the researchers would not be able to stay and actually conduct research and the social practice of science in Ny-Ålesund would not be able to exist.

The social practice of expedition cruise tourism seems to be made out of the meaning of visiting remote areas to see untouched nature and local communities. It highly depends on materials such as the expedition cruise vessel and the Zodiacs. People who are able to guide the tourists and control the ship are part of the required competences. Without the agreed upon meaning of expedition cruise tourism, which entails that remote areas are visited and that landings are done, it would be a normal cruise. It is necessary that the links between the materials and the meanings are formed in order for this practice to exist.

5.2 The Interplay between Science and Tourism in Svalbard

With the generated data in mind, the following secondary research question can now be answered: *“To what extent do the social practices of science and tourism in Svalbard mutually influence and re-shape each other?”*. The results show that there are several ways in which the interplay between science and tourism takes place in Svalbard. Considering figure 1, which displays the interplay between science and tourism, we can now say that this figure is applicable for the situation in Ny-Ålesund. This figure seems relevant in the sense that there is indeed a clear overlap between the practices. However, this overlap is not very big and not all the elements are shared between the practices. After the analysis, the figure 3 was created. In the overlapping area between science and tourism is where the boundary workers are active. They are capable of understanding both practices as they function in both the tourism

as the science sector. This flexibility seems to make it easier for the practices to co-exist and partly influence each other, without the occurrence of collisions. The boundary workers, who in the case of Ny-Ålesund often are both guides as researchers, understand what meanings, competences and materials are involved in both of the practices and make sure that both activities can be performed without interference. The practices influence each other in such a way that the biggest part of the science practice remains uninfluenced. One could say that both social practices keep their own core meaning and competences, as the guides need to lead the tourists and accompany them, yet the materials might overlap and the meaning and materials might be adjusted for the time being. The tourists make use of the surroundings and facilities in the town when they visit. Yet, science might be what attracts them to the area, because it makes Ny-Ålesund an unique place to visit. In that sense, the meaning of their expedition landing is influenced by the social practice of science. The social practice of science is also influenced by the social practice of tourism in a way. Even though scientists prefer not to be influenced in their work by the tourists in any way and the regulations are focused on protecting the research, the researchers are still influenced by the tourists. Whenever tourists arrive, some scientists are not willing to collect data and as shown in the findings, some even hide from them. This shows that, even though it might be undesired, the social practice of science is being influenced by the social practice of tourism in this case.

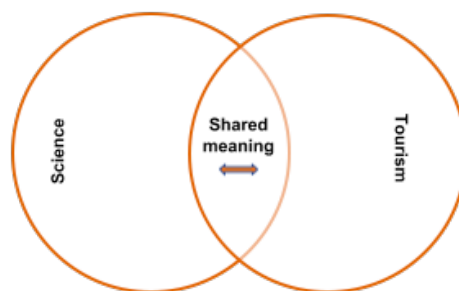


Figure 3. Interplay between social practices of science and tourism in Ny-Ålesund

Considering the findings, it seems that there was also a clear interplay between the social practices of expedition cruise tourism and science aboard the SEES cruise. This particular cruise in 2015 would not have taken place without the participation of tourists due to organizational reasons. Originally, this expedition cruise was organized with a research goal in mind, but through the realisation of this cruise a chance presented itself, which was the reason that there was an opportunity for tourists to join. Because this cruise was still focused on research, the tourism organization that handled the tourist bookings marketed the cruise as the “Arctic Academy” and informed tourists of the purpose of the expedition. This led to a situation in which tourists who are interested in research signed up. Whereas during a general expedition cruise, tourists might have different expectations, the tourists who joined the SEES expedition seemed to have a certain interest in science and were aware of the fact that they would be joining a big group of Dutch researchers who would be collecting data during the cruise. A term such as the “scientific tourist” might be applicable to some of the tourists visiting Ny-Ålesund and to most of the tourists who joined the SEES cruise. According to Ilyina

and Mieczowski (1992) the Circumpolar North “constitutes a particularly important region for prospective scientific tourism”. The SEES cruise seems to be a form of scientific tourism.

It can be said that there was an overlap between science and tourism practices during the scientific data collection that took place, because tourists joined the scientific activities. In this sense, meaning was built for both the tourists and the scientists. On the one hand, tourists were participating with science practices, but the scientists who allowed tourists to contribute to the data collection also contributed to the tourism practices by adding new meaning and materials. Figure 4 shows the relationship between the social practices of science and tourism during the SEES cruise. One could argue that a new practice was created during this cruise. This can be substantiated by the fact that a shared meaning for both groups is created. Materials are also being shared, as well as competences. The meaning is based on an expedition cruise where tourists help doing research and are entertained and the researchers receive help and join the tourists. The individual elements of the practices of science and tourism constantly re-shape each other. Even though it can be argued that the individual practices still seem to operate individual as well, they are still influenced by the different elements that belong to this new social practice. For example, whenever the scientists allowed tourists to help them collect data, they were reshaping the meaning of doing research as well as the meaning of the expedition cruise for the tourists. As Shove et al. (2011) state “new practices involve novel combinations of new or existing elements”. In the case of the SEES cruise, this new social practice is based on existing practices of expedition cruise tourism and doing research. The process of formation, which was mentioned in the literature review seems relevant here. New links between existing elements are being created.

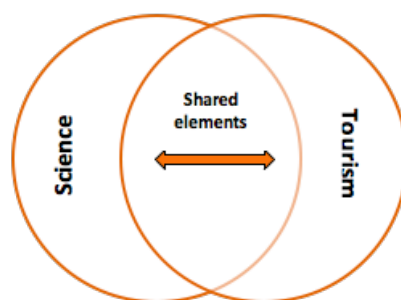


Figure 4. Interplay between social practices of science and tourism during the SEES cruise

Figure 5 shows how elements of the existing social practices of tourism and science lead to the formation of a new social practice. This does not imply that the practices of science and tourism stop existing individually during the cruise. Science and tourism impact and re-shape each other in different ways as their symbiotic relationship is plural. The merge of the elements of the social practices and the creation of the social practice of science-tourism expedition cruising is displayed in figure 6.

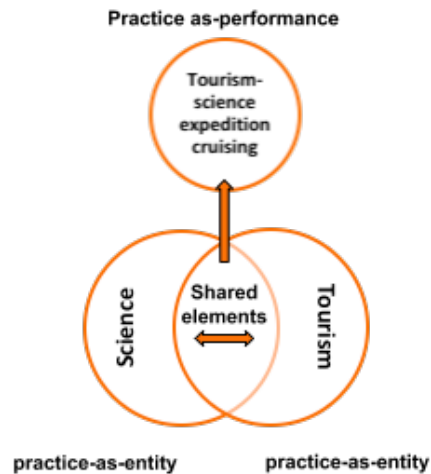


Figure 5. Expedition cruise tourism and science merging into a new social practice

Even though this new meaning is created during the SEES cruise, materials are available and the needed competences as well, the practices can still function separately too. Data shows that, despite the cooperation and interaction between tourists and researchers, researchers also conducted research without the tourists being present. Therefore, their research practices were not always influenced by tourism practices. An example of this is when the researchers were allowed to do a landing at a specific site, and due to regulations tourists were not allowed to join, but the researchers did the landing anyway. At this point, the social practices were separated because there were different competences and regulations. Due to the overlapping sectors, boundary workers are needed in order to be able to adjust to both of the sectors and to make sure that there are no conflicts.

This new social practice of science-tourism expedition cruising seems to exist only temporarily. Considering Shove et al. (2011), if the concept of the SEES cruise would be considered to be a social practice, it would be a practice-as-performance and not a practice-as-entity as it is not recognized as an entity. The practice of the SEES expedition disappears when the cruise ends and only exists when it is performed. This is because the links between the existing elements are being broken when the cruise ends. The social practices of tourism and science will still exist, but when the tourism-science expedition cruise comes to an end and the elements are no longer combined, the practice no longer takes place.

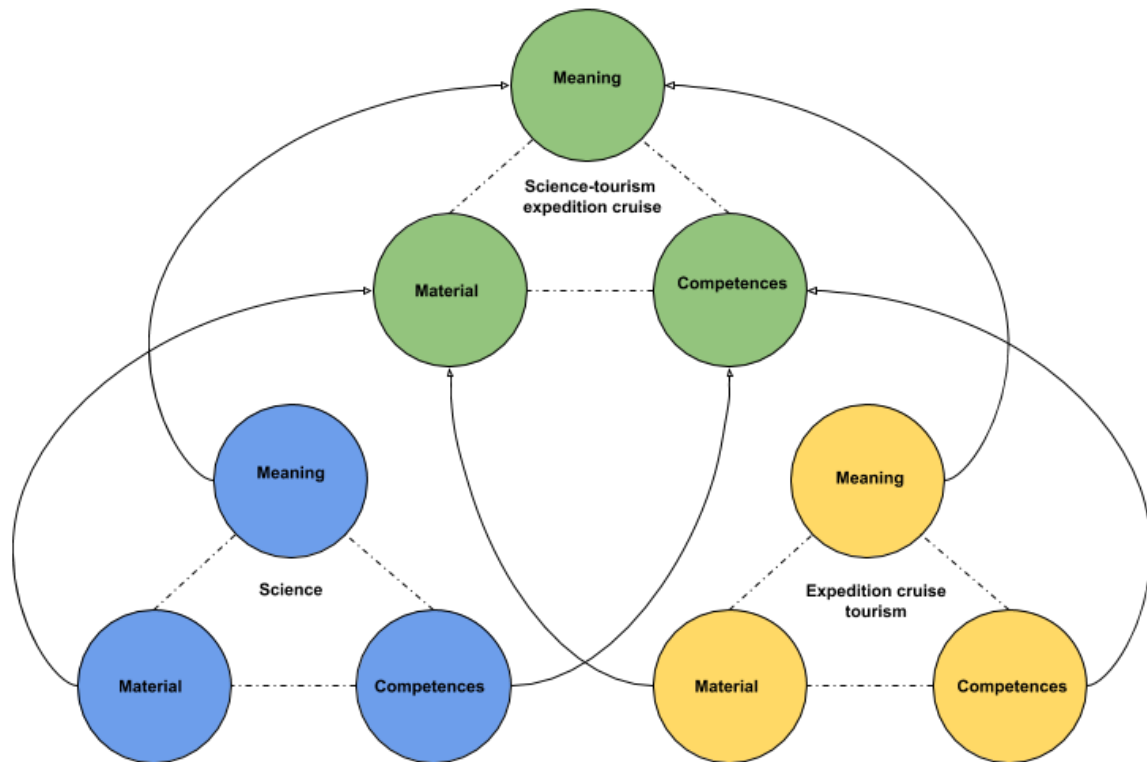


Figure 6. Formation of a social practice with existing elements

5.3 Different Forms of Interplay and their Managerial Implications

This chapter will compare the findings of both cases in order to see whether the interplay between science in tourism of both cases differ and what managerial implications exist for these cases. The following the secondary research question will be answered: *“What are the managerial implications of the relationship between science and expedition cruise tourism in Svalbard?”*.

The relationship between the social practices of science and tourism in Ny-Ålesund and during the SEES cruise prove to be quite different from each other in multiple ways. The research stations in Ny-Ålesund are currently managed by the state-owned company Kings bay. This company is under control of the Norwegian Ministry of Climate and Environment. The current management strategy is focused on enabling the research stations to function to their full potential. It is not in the intentions of Kings bay or the ministry to develop tourism in any way. However, expedition cruise landings are regulated in order for the research activities not to be disturbed. The relationship between science and tourism in Ny-Ålesund seems to be managed in such a way that the scientific activities and the natural environment are protected. There are strict regulations that need to be followed by the cruise organizations, but if they follow these they are allowed to visit the area and guide tourists around. In order for the tourism sector to function some facilities were provided. These include a post office, a

shop and a museum. There seems to be a quite peaceful co-existence between the two social practices, which is guided by these regulations. However, it might also be due to the boundary workers that both touristic and scientific activities can take place in a smooth and peaceful manner and that there are no collisions between the different groups that have an interest in the town.

Where it seems that in Ny-Ålesund there is a small overlap between the two practices, the overlap during the SEES cruise seems to have been bigger and even lead to a practice-as-performed. The SEES cruises needed the tourists in order to be organized in the first place. Without the tourists, the whole expedition on the *Ortelius* would have been financially impossible. In this way, the researchers were depended on the tourists. This also worked the other way around. The whole research concept of the cruise was what attracted the tourists in the first place. The tourists were benefitting from the research activities. The scientific activities were adding value to the tourist experience and changed the meaning of the tourism experience. These different overlaps between science and tourism of the two cases is clearly noticeable in figures 3 and 4. Whereas it seems that in the SEES case, we can speak of a new social practice that is being created by existing social practices whose elements are combined in this situation, in the case of Ny-Ålesund there is merely a small overlap between two separate existing social practices.

In terms of the management aspect of social practices, no rules seem to exist on how they are ought to be managed. This could be based on the fact that every social practice is made out of different elements that differ depending on their context. Tourism as a social practice is a bundle of other social practices and includes many tourism forms. Therefore, there is not one way in which the social practice of tourism should be managed in relation to the social practice of science, for which the same situation applies.

In 1984, Reed analysed management itself as a social practice. However, there is no literature on how the social practices of science and tourism can be managed. Considering the findings, it seems that the way in which social practices are managed in these cases depends on the meaning and importance of the practice for the stakeholders. In the case of Ny-Ålesund, organizations try to manage the interplay as it currently is and to keep the science and tourism sectors separate in order to protect the scientific activities and the nature. In the case of the SEES cruise on the contrary, the merge of the social practices was welcomed by the different parties as it gave meaning to the practice of the cruise and had organizational and financial benefits. Nevertheless, science still had a more prominent role during the SEES cruise, as the cruise was first and foremost organised as a scientific expedition. It seems that whenever there is enough shared meaning for the stakeholders of two different social practices, either a new social practice can emerge considering that the other necessary elements are also shared, or a co-existence can take place in which the individual meanings of the practices are protected against external influence by enforcing rules and regulations that create a clear boundary between the practices. Partly due to the boundary workers, who are able to understand the meanings of the practices for the stakeholders of both the tourism and science sectors, the boundary is respected and carefully dealt with. Their flexibility to switch between roles at any point in time allows them to adapt to possible inconvenient

situations that might occur when the social practices overlap and there are no shared meanings or objectives.

5.4 Managing Science and Tourism Practices in Svalbard

It seems that the interplay between touristic and scientific activities is managed by a combination of multiple organizations that have set up regulations in order to keep the two from interfering. However, it might be the social connections that exist that allow for the rather peaceful interplay between stakeholders of both sectors. Most of the interactions between the scientists that reside there and the guides that come with tourists are based on informal social structures and are not based on any formal regulations or activities. In this sense, the boundary workers are crucial, as they understand the meanings and motives of stakeholders who work as scientists or tour guides. It is partly because of their flexibility that tourism and science can take place, as they are able to manage the activities in such a way that there is a balance and that all wishes are met. For most researchers, more interaction with the tourism sector is not desired, as it would get in the way of their research. Data shows that researchers are quite content with the way Ny-Ålesund is managed now, which is based on the idea that research is the most important. One of the interviewee's states: "There are opportunities for more cooperation, but those will not be used" (personal communication, May 28, 2018). This statement shows that there could be more cooperation between the tourism and science sectors, but it is likely that this will not be achieved as it is not desired by the researchers as they are quite content with the current situation. Therefore, it seems unlikely that there would be more interplay between these sectors in the nearby future.

As Ny-Ålesund is quite unique as a research community, it is difficult to say whether the interplay between research and tourism activities is managed the same way in other Arctic communities. As the relation between science and tourism takes different forms, as was previously showed in the results, there might be other contexts in which their social practices and their relationship with each other differ from the cases that were studied in this paper.

One could wonder whether tourism and science can be combined when there are no intentions of collaborating. However, as the data showed, there are financial benefits that come with tourism. This might be one of the reasons co-existence tolerated in some cases, even though it might seem impractical. In these cases, both tourism and science are managed with the aim to be as efficient as possible. An important factor in the way science and tourism are related to each other seems to be the meaning that stakeholders attach to a specific social practice. This could be based on their surroundings and their social context. In different contexts, different people have different goals and external factors influencing them. Subsequently, they might deal with external social practices differently, which would influence the relationship between those social practices. Furthermore, other Arctic communities might not be research communities, and therefore, might not primarily focus on conducting research. They could have more commercial plans concerning tourism. Ny-Ålesund is not the only research community in Svalbard. In total there are four permanently manned

research stations in Svalbard, including Ny-Ålesund, Barentsburg, Longyearbyen and Hornsund (Svalbard Science Forum, 2012). Longyearbyen for example, is home to many research institutions, even parts of the Norwegian Polar Institute (Svalbard Science Forum, 2012). At the same time, tourism is developing in this town. Yet tourism might be managed very differently in this town. The Heavy Fuel Oil ban does not apply to Longyearbyen, which causes that the cruise vessels with thousands of tourists can visit the area. Moreover, Longyearbyen also is inhabited by non-research communities, which might affect the overall attitude towards tourism. This is an example of how the described interplay between science and tourism does not take place in every Arctic expedition cruise destination.

Even though Viken (2011) showed that there is a symbiotic relationship between science and tourism in Svalbard, this plural relationship seems to differ in two settings in Svalbard, which is an interesting finding of this research. The theory that this relationship can be described as symbiotic might be too generalizing, considering the findings of this research, which show that there is not just one way in which tourism and science re-shape each other. In some cases, it is questionable to what extent tourism and science practices should be combined as collaboration or co-existence is not always achievable and competition between the practices could cause conflicts between stakeholders.

5.5 Limitations and Future Research

This research is subject to a few limitations. First of all, the data that was used was partly secondary-data. This data was gathered partly by doing interviews with people of different backgrounds by L. Van Bets and M. Lamers. There are many advantages to using secondary-data, but there might also be a disadvantage. For one, the data was gathered with a different research objective in mind. Using secondary-data might lead to less appropriate data. In order to overcome this possible obstacle, additional interviews with some of the same interviewees were conducted. Moreover, the first hand-data that was collected, was collected in the Netherlands and the sample consisted of Dutch stakeholders. Therefore, the interviews were done in Dutch and the data was translated to English. Translating the original statements might have caused that some of the data lost part of its original meaning. Moreover, this sample only displayed the vision of Dutch researchers and guides and does not include stakeholders with other nationalities, while there are many other nations represented by the research stations in Ny-Ålesund. Therefore, a possible contribution to future research about tourism and science in Ny-Ålesund would be studying these practices with a more international sample. Furthermore, due to the research design there might be other disadvantages. This exploratory research was based on a relatively small sample for example. Moreover, the relationship between the social practices could be researched from different scales as well. Viken (2011) researched the symbiotic relationship between science and tourism from a broad perspective, and this research aimed on zooming in on the social practices of science and tourism on a smaller scale.

Partly due to the fact that the concept of the SEES cruise is still relatively new and developing, there is not much known about the relationship between science and expedition

cruise tourism in the Arctic. Further research on the interplay and merge of these activities would be useful to fully understand this growing phenomenon. Moreover, expedition cruise tourism as a social practice has also not been studied by many scholars yet and more research could add broaden the knowledge on this phenomenon. Researching the follow-up SEES cruise in 2020 might allow an even more clear overview of the interplay between science and tourism and this new social practice. Moreover, it would be an opportunity to research whether this same type of social practice would take place again or whether there might be different factors influencing the social practices, resulting in different outcomes.

6. Conclusion

This research aimed to discover the interplay between science and tourism practices in the Arctic. In particular, the way this interplay is managed in research towns in the Arctic was researched in this paper. Two different cases were analysed in order to research the interplay between science and tourism in different contexts. The first case, focussing on research town Ny-Ålesund in Spitsbergen, was chosen in order to display the interplay between scientists and their social practice and expedition cruise tourists and their social practice on land. The second case focused on the SEES cruise. This case was chosen, as the setting was remarkably different from Ny-Ålesund, because the social practices of tourism and science took place on a tourist vessel.

Social practice theory was used as a tool to uncover the links between science and tourism and how they function differently as interdependent social practices in the two cases in the first place. Interviews were done with stakeholders who function in the setting of Ny-Ålesund and who joined the SEES cruise in 2015. Both inductive content analysis and deductive analysis was used in order to analyse the first-hand and second-hand data. This resulted in multiple codes related to the concepts of this research. The qualitative analyses showed that in the two cases, the interplay between the social practices is different. There is less interplay between science and tourism in Ny-Ålesund than during the SEES cruise. Not only does it vary in amount of overlap, the way the social practices reshape each-other also varies. This can be explained by multiple factors. First of all, in Ny-Ålesund tourism is not a necessity to keep the social practice of science going, whereas for the realisation of the SEES cruise, tourism was needed in order to organize the expedition in the first place. In this case, researchers needed the tourists to some extent. Because of this situation, chances existed for both the tourists and the researchers, as they combined their activities and helped each other. A shared meaning was created and a new social practice, which is a practice-as-performance resulted from the merge of science and tourism practices.

The main research question of this paper was *“How is the interplay between touristic and scientific activities managed in Svalbard?”*. When it comes to the interplay between touristic and scientific activities in this research community, there are many regulations. These regulations were enforced based on the idea that Ny-Ålesund should function as a research site primarily. Tourism is allowed, as it does provide income and as it reduces the high cost

that exist for researchers and organizations on-site, but local tourism development is not desired by local stakeholders and the main aim of the organizations that have regulative power is protecting the scientific activities that take place.

All in all, it can be said that the social practices of science and tourism overlap in situations where they need to co-exist or build on each other. The way in which the social practices of tourism and science relate to each other in Svalbard differs, as their relationship is plural. The extent to which they merge and overlap depends on whether enough shared meaning exists between stakeholders of both social practices. It was shown that the relationship is not always the same. Besides co-existence, there can also be collaboration or competition between tourism and science. Materials are often shared, but without a shared meaning conflicts could arise. In the case of Ny-Ålesund, tourism is not a necessity for the science sector to properly function. The financial benefits of allowing tourists in the town do facilitate the research, which is one of the reasons that there are no conflicts between the two separate practices even though they do not have a lot of shared meaning. The expedition cruise tourism industry also does not need the science activities in Ny-Ålesund. However, to some extent the research that is being done is part of the tourism product of Ny-Ålesund. Nevertheless, scientific activities that take place on-site do not need to take place when tourists arrive in order to keep the social practice of expedition tourism going in Ny-Ålesund either. Tourists do enjoy being able to see research taking place, but it is not crucial for the actual social practice of tourism itself, as scientists are not involved with the tourists in any formal or regulated way.

An interesting question is what will happen with the SEES cruise in the future. In 2020 the second cruise will take place, which shows that the first expedition was considered to be a success. Changes that could take place over time might affect the way tourism and science are related during this expedition cruise, causing their relationship to be different from the one that existed during the 2015 SEES expedition.

Furthermore, Ny-Ålesund will experience a managerial from the organization Kings Bay towards the Norwegian Polar Institute, as no longer the Ministry of Trade and Industry will be guarding Ny-Ålesund. The Ministry of Climate and Environment will take over. Considering that this ministry might have other interests, it is questionable what this shift will mean for expedition cruise tourism and the way it is related to the science practices that are of great importance for Svalbard and polar research.

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