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Power and Inclusion

Relations of Knowledge and Environmental Monitoring in the Arctic

ABSTRACT This article is a critical study of the planning and design process of the Sustaining Arctic Observing Network (SAON). SAON, in its ambition to build a comprehensive, pan-Arctic monitoring system, seeks to integrate all relevant scientific and environmental monitoring sites in the Arctic, guided by an ethic of inclusion regarding the knowledge of indigenous Arctic peoples (KIAP). It is argued that the logics of inclusion in play, paradoxically, risks limiting the capacity for Arctic indigenous peoples to control their knowledge and its uses, to monitor the activities and outputs of SAON itself, and to appropriate the SAON system and its data for uses they control. This article also suggests an alternative approach: rather than place KIAP within SAON, it calls for planners to consider establishing knowledge relations between SAON and KIAP so that the distinct status of KIAP—in a position of exteriority to the comprehensive monitoring system—is acknowledged. Within these knowledge relations, differences in the production of knowledge can be effectively recognized, a site can be created for reviewing SAON's monitoring work by local communities and practices, and strategies for open, adaptable data systems for local users can be established.

KEYWORDS Arctic, monitoring, epistemology, environmental politics, science and technology, SAON

Introduction

A central locus of monitoring ambitions since the nineteenth century (see Levere 1993), the Arctic is now understood to be a crucial region for observing the effects of global climate change, including increases in temperature, melting sea-ice and glaciers, and shifts in terrestrial and marine life (*Arctic Climate Impact Assessment* 2005: 8).[1]

Accordingly, efforts are underway to organize the myriad Arctic observation networks into a comprehensive system-of-systems to improve the understanding of the Arctic (SAON 2008) and increase capacities for decision-making as part of Arctic environmental governance. This drive will materialize in the formation of the Sustaining Arctic Observing Networks (SAON).

This paper explores the logics of knowledge production involved in the planning of SAON and what is at stake in the effort to build SAON as a comprehensive monitoring system in the Arctic region. It argues that a comprehensive approach—one that integrates all the sites of knowledge production judged to be relevant to monitoring the Arctic, including the variety of knowledges of indigenous Arctic peoples (KIAP)—risks producing a system that limits the capacity for Arctic indigenous peoples to: a) control their knowledge and its uses; b) monitor SAON itself; and c) access SAON data and information in ways and for uses they control.

Through an analysis of documents released since 2007 that outline the fundamental plans for SAON, we will explore the attempt to be inclusive and comprehensive regarding forms and sites of knowledge produced and accessed in the Arctic. Even if SAON changes course (toward or even away from what is suggested here) or fails to be developed, this analysis remains relevant. This is because the process of planning SAON speaks to a particular way of thinking about building systems for mastering knowledge that remains prevalent in the realm of Western science, even a science that increasingly attempts to be inclusive of other forms of knowledge.[2] We critique the planned starting point for SAON not only because of what SAON may limit but also to point to the potential for an alternative starting point for engagement between knowledges.

As the focus of this paper is knowledge system-building and proposed ways of drawing KIAP into that system within the Arctic region, it will not address the actual knowledge practices of KIAP. Nor will it address how indigenous peoples are involved in community-based monitoring (as found for example, in knowledge produced by indigenous Arctic peoples in coastal Arctic communities about environmental and biological change found within the Bering Sea Sub-Network [BSSN], or the knowledge of reindeer

herding practices found with Ealát, the Reindeer Herder's Vulnerability Study, both of which are to be included within SAON; see Arctic Council Indigenous Peoples' Secretariat 2010).

Rather than assuming that KIAP will be included inside of (that is, integrated into) SAON as a source of information and knowledge about ecological conditions in a locale, we argue that KIAP should be explicitly recognized as standing outside the boundaries of the system, in a position of exteriority. But instead of treating this exteriority as the basis for exclusion or disregard of KIAP, we suggest that an information and knowledge system such as SAON can recognize the value of other knowledges without attempting to subsume them. Instead, SAON can approach itself and KIAP as complements and seek to establish relations of knowledge. We understand these relations as informal, loose, flexible, but obliging and responsive sets of relations of knowledge exchange. These relations of exchange should be open to renegotiation on a regular basis, with informal commitments and norms operating to ensure that this flexibility does not lead to a hierarchical relationship between SAON and KIAP.

What we suggest is that knowledge relations between SAON and KIAP need not be formal as they can rest on verbal understandings. Nor do they need to be tactical and strategic, but simply a function of mutual interest in cooperation and collaboration. Instead, knowledge relations between SAON and KIAP could be constructed where the KIAP is understood and acknowledged to be exterior to SAON such that indigenous peoples determine how their knowledge is used and on what terms it is drawn into SAON. This use and terms are to be continually open to renegotiation and resetting based on developments in local Arctic communities and the Arctic region, SAON, and the wider world. We envision this as a continual process of (re-) negotiation and trust-building in relations between indigenous and Western actors (Delgado & Strand 2010) and their knowledges. These processes could thus provide a framework for long-term relationships, which Horowitz (2010) argues is critical for building trust. The goals of the knowledge relations would also be open to negotiation as determined by KIAP but could broadly include the enrichment of Arctic environmental knowledge. More precisely, the objectives would include creating a space within which communications about inequalities in the production of knowledge could take place whilst avoiding appropriation by SAON, provide a site for reviewing SAON's monitoring work by local communities and practices, and encourage a system of data management that is appropriable for local users within Arctic communities.[3]

We begin by establishing the importance for investigating SAON, arguing that the current moment is crucial for interrogating SAON's plans. We

then go on to explore the comprehensive approach that is central to SAON's planning. We subsequently focus on the implications of establishing a comprehensive system. In doing so, we consider: what an all-encompassing system might mean for the status of KIAP; the possibility of independent, community-based monitoring and oversight of the SAON system itself; and the capacity of indigenous Arctic peoples to adapt the SAON system and its outputs to their own needs.

SAON. A System in Formation at a Crucial Moment

In general, the present juncture is a crucial moment in how knowledge can be produced, monitored, and synthesized. The advance in digital technologies is one reason special attention to the development of monitoring systems is urgent. We are at a point where such systems are possible and are in formation in many sectors (Latham 2006). In the Arctic region, these technologies have enabled the possibility for the construction of a large-scale system-of-systems such as SAON.

Formed in response to a call made at the 2006 Arctic Council's Ministerial Meeting in Salekhard, Russia, in anticipation of the 2007–2008 International Polar Year, SAON is unique in its ambition and potential to synthesize and integrate existing observation systems and their data into a large-scale observation network. SAON is designed to sustain Arctic environmental data, to improve the understanding of the Arctic environment (SAON 2008), and thereby increasing capacities for decision-making as part of Arctic environmental governance.

SAON is planned to become *the* pan-Arctic informational system dedicated to coordinating the observational data of over 44 already operational monitoring systems referred to as "building blocks" (SAON 2008: 11). These building blocks are organized into three levels of observation systems: research observing within scientific communities, operational observing from government agencies, and local observing by Arctic residents and communities (SAON 2007: 2). Each of these systems are planned to cover as much Arctic observational data and information as possible. The three levels are to function under the wide remit to strengthen connections between "research and observing activities and associated data/information management services, and the societal benefits and needs from Arctic observing" (SAON 2008: 12). Scientific research and education, data products and technology, and the development of forecasting and prediction capabilities are the proposed benefits that will feed into decision-making and the development of policy by the Arctic Council and SAON participants (SAON 2008: 12).

Co-ordinated by the International Arctic Science Committee (IASC) and the Arctic Council, SAON's founding members included the Arctic Council, European Polar Board-Global Ocean Observing System, Indigenous Peoples' Secretariat, and the National Science Foundation (USA). SAON subsequently began its planning process, coordinated by the Sustained Arctic Observing Networks Initiating Group (SAON IG), formed in 2007. Tasked with developing a set of recommendations on how to "achieve long-term Arctic-wide observing activities that provide free, open, and timely access to high-quality data that will realize pan-Arctic and global value-added services and provide societal benefits" (SAON 2012), workshops were organized in Stockholm, Sweden, Edmonton, Canada, Helsinki, Finland, and St. Petersburg, Russia from 2007–2008. The outcome of these workshops was published into the Report "Observing the Arctic" (SAON 2008), which concluded that

> Arctic observing sites did not adequately cover the Arctic region, observing data are fragmentary and not easily available, and only a part of the Arctic observing is funded on a long term basis. (SAON 2008: 1.)

SAON is now planning for its implementation by a Steering Group, comprised of members of the Arctic Council states, indigenous people's organizations who are Permanent Participants at the Arctic Council, the IASC and the World Meteorological Association (WMO) (SAON 2012). Once implemented, SAON will be a massive, transnational monitoring effort designed to facilitate, coordinate and collaborate amongst existing monitoring networks, data, and information systems (SAON 2008: 11).

With this background in mind, the first reason why the present moment is such a crucial one for investigating SAON and its proposed approach to knowledge relations stems from the sense of urgency to respond to global climate change. According to the SAON Initiating Group, superior, more synthesized, and better-organized knowledge about climate change is needed (SAON 2008: 2). SAON is meant to provide an opportunity to systematize and expand Arctic observations in order to build

> understanding of the impacts of environmental change and human activities on the marine and terrestrial ecosystems of the Arctic so that ecosystems can be better managed and sustained to maintain and to improve the quality of life both for Arctic residents and all peoples who are connected to the Arctic. (SAON 2008: 4.)

According to SAON planners and potential participants, climate change necessitates the construction of networks and linkages in monitoring data to

"facilitate improvements in Arctic observing, and related data and information management services" (SAON 2008: 13; SAON 2009*a*: 1), which in turn will guide environmental governance regarding decisions made by the Arctic Council, IASC, and WMO. As climate change is not limited to the Arctic, SAON also plans to be interoperable with other systems, such as the Global Earth Observation System of Systems (GEOSS) (SAON 2008).[4] SAON can therefore offer another resource for understanding climate change not only for the IASC and Arctic Council but also for other systems and governance structures outside of the Arctic region.

The current moment is also important because SAON is at a critical juncture in its formation, with its Steering Group looking towards implementation. On the one hand, SAON's component parts are already in place and producing observations. For example, many of SAON's networks and much of SAON's proposed design and organization will be based on the Arctic Observation Network (AON) (see SAON 2009*a*; AON 2010), an American initiative of the National Science Foundation. For its part, AON is significant for its efforts in gathering long-term data based upon observations about the Arctic's atmosphere, ocean and sea ice, hydrology/cryosphere, terrestrial ecosystem, and human dimension from numerous projects (AON 2010). The data and information based upon these observations are to improve knowledge about environmental change and inform the American Study of Environmental Arctic Change (SEARCH) program (AON 2010). What is of concern is the ability to use AON, an U.S. national initiative, as a template for SAON, an international effort that would ostensibly require more time, resources, and ability to gather and concentrate Arctic data and information than its American counterpart.

On the other hand, it must also be kept in mind that SAON is not operational as a system-of-systems. At this moment, SAON is not locked in with regards to its particular design. It is therefore the moment to ask questions about stakeholders (such as government agencies, scientists and research centres, and local communities in the Arctic) and the potential distribution of benefits from the knowledge flowing through SAON. It is also timely to query the application of SAON-based knowledge (for example, in monitoring and controlling fisheries) and the organization of SAON's data and information, and to question the nature and consequences of the comprehensive system that SAON's designers are planning. These issues need to be raised and such questions asked now, as once locked in, such a comprehensive system will be even more difficult to change than one that operates on a smaller scale.

These issues and questions might be asked of any infrastructure in formation. Infrastructures (such as cyberinfrastructures) can be

> sites of intense conflict, through which the identity and status of relevant stakeholders, the distribution of benefits, and losses, and the general rules of the game are all being worked out simultaneously. (See Jackson *et al.* 2007: 6–7.)

The identification and naming of actors as winners or losers and the articulation of who gets what and when (Jackson *et al.* 2007: 6–7) are choices about the allocation of power. These issues make the processes in SAON's formation especially crucial.[5] Thus, decisions about how networks are included and what information is involved in SAON (which would affect what is disseminated through the system) are of great consequence, as are decisions about what constitutes the "gaps" in Arctic knowledge that SAON is designed to fill as part of the benefits of the proposed system (see SAON 2008).

The valuations of the knowledge SAON plans to sweep into its proposed system and the ways in which this information is transformed and used through technologies will also become imbued with power relations. How knowledge, data, and information that SAON selects to incorporate into its structure would position SAON decision-makers (within SAON's Steering Committee, the IASC, and Arctic Council) in a determining role over other (scientific, governmental, and community-level) actors who submit their data and observations. These decisions can recast, reframe, and render the Arctic, its ecologies, and its peoples in particular ways by controlling the production and dissemination of knowledge about the Arctic through SAON. Specifically, this could be done through technologies within SAON's system design and administration (such as its data management, information portal and interoperability mechanisms with other systems), practices and logics which underlie them (such as decisions about protocol for observation networks and building blocks and distribution of information), and grammar (choice and use of language and terminology to describe and frame problems) (Latham 2010).

A Comprehensive System

The plans to have SAON coordinate and integrate the numerous, already-existing systems and "strengthen the linkages between research and observing activities and associated data/information management services" (SAON 2008: 12) are directed towards creating a comprehensive system. This is not a totalizing project. There is no ambition to integrate and draw into its network *all* information and knowledge about the Arctic region in order to generate a totalized field of social power, or totalistic information and knowledge matrix over this space.[6]

As a comprehensive—as opposed to totalizing—system SAON would seek to draw together the known set of discrete systems of observations operating in or over the Arctic. From the perspective of Western knowledge, it may appear self-evident that there is value in this comprehensiveness, as SAON is tasked with developing as complete a body of observations about Arctic conditions as possible. But what is at stake in this logic is the positioning SAON as the overarching context for Arctic knowledge and information, with KIAP as merely one form of knowledge production. And thus pronouncements on conditions in the Arctic become the authority of SAON, with KIAP left to the role of information source and knowledge subaltern.

There are two noticeable sites for the articulation of SAON's comprehensive logic. One is its proposed structure. As specified by the IASC and Arctic Council, SAON is meant to become the Arctic regional informational system. It will be dedicated to coordinating observational data from the 44-plus building blocks which engage in research observing within scientific communities, operational observing from government agencies (SAON 2008: 11) and local observing by Arctic residents and communities, the latter which includes KIAP. It bears repeating that these different levels of observation will cooperatively work to cover as much Arctic observational data and information as possible. Further, in keeping with SAON's express desire to cooperate with and include indigenous actors and knowledge (evidenced by the inclusion of the Indigneous People's Secretariat [IPS] of the Arctic Council in SAON's Initiating Group and Permanent Participants [PPs] of the Arctic Council in its Steering Group), all levels of observation—including community-based monitoring projects that are based on KIAP—are conceptualized as having equal status in SAON's plans (see SAON 2008: 3).[7] This means that community-based monitoring projects based on KIAP, such as the Sanikiluaq Sea Ice Project that is part of the Exchange for Local Observations and Knowledge of the Arctic (ELOKA) initiative would have equal status to those projects based on Western science, such as the WMO's Global Ocean Observing System's (GOOS) Argo project. Part of the proposed value and benefit of SAON is that research, operational, and local observing levels are to function under a wide remit to strengthen connections between "research and observing activities and associated data/information management services, and the societal benefits and needs from Arctic observing" (SAON 2008: 12). Scientific research and education, data products and technology, and the development of forecasting and prediction capabilities are the proposed benefits that will feed into decision-making and the development of policy by the Arctic Council and SAON participants (SAON 2008: 12).

A second articulation of SAON's comprehensive aspirations is the role

and identity SAON will adopt. SAON would become the collector of Arctic ecological data and knowledge, in order to become the sole organizer and disseminator of Arctic ecological information. As such, SAON will become an observational system that coordinates and concentrates the input of data. It will also become an information system that provides data output to end-users in support of "Arctic and global value-added services and societal benefits," that is, the provision of Arctic ecological knowledge and a means of coordinating it. In turn, the system is designed to be interoperable with global systems and systems working outside of the Arctic (see SAON 2009*a*: 1).

According to the information available, the SAON plans include the design of a singular data portal, in which observational data and information will be stored and organized. The rationale for creating the data portal reinforces the notion that SAON will assume a comprehensive role, because SAON will act to sustain existing Arctic observational networks as a "legacy" for the 2007–2008 International Polar Year. This contribution to the legacy of knowledge indicates that SAON wishes to be a long-term, comprehensive repository of Arctic observations.[8]

SAON's Comprehensive Desires ... with Unexpected Consequences

As argued above, in order for SAON to approach its comprehensive goals, it has to follow a logic of incorporating and concentrating Arctic environmental knowledge. This knowledge comes from local communities, and means that KIAP-based projects will be brought into SAON to form trans-local networks. In turn, these trans-local networks will bind together communities and link diverse actors. By concentrating and incorporating community-based monitoring and observations into its system (SAON 2008: 12), SAON may create unintended consequences for KIAP. In the logic of its collection of as many observational networks as possible, SAON may risk producing an unbounded system that has no exterior from which local communities can control their knowledge in relation to SAON, as they will become outflanked by SAON. Further, in integrating all sites that SAON deems relevant to Arctic monitoring, indigenous Arctic peoples will not be able to monitor SAON from an outside position, which could potentially reduce the quality of information and data that would circulate through SAON.[9] Finally, by aiming to become comprehensive, SAON's plans do not indicate that it will be a system that will allow its data to be used and appropriated by those outside of its system in creative and unanticipated ways. Below, each of these possibilities is examined in turn.

Exteriority and Control over Knowledge

The creation of SAON as a massive information and data system risks rendering indigenous Arctic peoples unable to establish and control the boundaries and applications of their knowledge. This would not be on account of malice on SAON's part, or a desire to marginalize or absorb KIAP. Rather, it would be because SAON is committed to comprehensiveness and the inclusion of KIAP.

First, a loss of control over KIAP becomes a real possibility given the large proposed amount of observation networks, data, and information that SAON plans to digests (see SAON 2008: 11). Some building blocks claim to collaboratively use Traditional Ecological Knowledge (TEK) and Western scientific knowledge in their observation systems (for example, the Circumpolar Biodiversity Monitoring Program and the Centre for Inuit Health and Changing Environments).[10] While this may initially seem positive, the idea that these building blocks are rooted in both TEK and Western knowledge can be problematic, as knowledge framed and cast as TEK may easily be appropriated and swept away by SAON. This is because TEK is a broad, ambiguous term that lacks much of the specificity needed for it to become the basis of power or resistance practices, a quality that would greatly improve by emphasizing locality and/or indigeniety (see Nadasdy 1999; Martello 2001).[11] Furthermore, when framed vis-a-vis Western knowledge systems (which historically have represented themselves as universal and solely legitimate compared to other epistemologies), TEK can easily be integrated and misappropriated, extracted, and altered in the service of Western science (Nadasdy 1999). SAON has not indicated how it would take specific steps to avoid this.

Returning to the composition of knowledge that will flow into SAON through the building blocks, it is notable that at this time, few of SAON's named building blocks are devoted exclusively to KIAP. Many more, including Developing Arctic Monitoring and Observing Capabilities for Long-term Environmental Studies (DAMOCLES) and the Global Ocean Observing System (GOOS) are of the Western-scientific variety (see SAON 2008: 13). Because of the number of observation systems based on Western knowledge and SAON's desire to provide a comprehensive system by incorporating KIAP, it would be difficult indeed to avoid crowding-out and displacing KIAP—if only because of the overwhelming proportion of non-local, non-KIAP projects.

Another consequence of the comprehensiveness built into SAON's system-design plans is that the spatial dimensions of knowledge production will be reconfigured. It will be scaled up from locally monitored sites to the

(pan-Arctic) regional level and, through interoperability with global observation systems, to global levels (via the global observation systems mentioned above). For example, during SAON's Stockholm workshop in November 2007,[12] a noted priority was to "recognize transition from regional observation systems to pan-Arctic observation network" (SAON 2007: 25). Additionally, global scaling will be achieved by linking with global monitoring systems such as GEOSS (see LeDrew 2008; SpecNet/NORTHSTAR 2008).[13]

Another example of rescaling KIAP follows from a document released by SAON's Steering Group regarding community-based monitoring. The document discusses SAON's creation of an inventory of community-based monitoring and observation networks as reported through national representatives, and stressed the importance of identifying all relevant community-based monitoring and observation projects (SAON 2009*b*: 2), ostensibly to avoid having national representatives miss or ignore KIAP projects and their observations in scaling knowledge up to the national level. This suggests that KIAP is already being subject to the process of collection and inventory-taking, with national representatives identifying the networks that are deemed relevant and ultimately how they may connect with other local and to transnational and global networks. Thus, in this scaling-up, KIAP is being embedded in local, national, regional, and global hierarchies not of their choosing.

The organization of the networks being drawn up into SAON and the management of their data means that key actors within SAON will act as collectors of knowledge. This risks SAON becoming an information-broker: distributing Arctic environmental knowledge and ensuring that its knowledge—and preferred "building blocks" that support such knowledge—are sustained and not subject to scrutiny. In such a process, control over the content and use of KIAP is transferred into SAON; as SAON, not indigenous Arctic peoples, will be the brokers of Arctic ecological knowledge and thereby determine the content and application of the knowledge that they distribute.

Also, SAON planning ignores the risk that system managers will draw out only selected observations and information from the wider contexts of local knowledge production; in Nilsson Dahlström's words, "picking the cherries out of the [indigenous] cake" (Nilsson Dahlström 2009: 54). The effect is de-contextualizing, and therefore devaluing to indigenous knowledge (Nadasdy 1999; Simpson 2001; see also Nilsson Dahlström 2009: 52), allowing its nuances to disappear (Harding 2008: 148). All the while SAON is making a claim of inclusivity (of KIAP) as a part of planning its comprehensive system, while ignoring that, as a part of Western science, it too is

embedded in a local context (Watson-Verran & Turnbull 1995). Further, in planning a comprehensive system that works by collecting as much knowledge as possible, SAON would set the parameters and context of knowledge and thereby might subject KIAP to SAON's own standards of precision and measurement (see Adas 1989: 203). Moreover, even if SAON were to make efforts to incorporate the broader context associated with KIAP into its system design, the process of sweeping it up into its system would still present the possibility of devaluing it. This is because power would not be in the hands of local actors to organize knowledge within the system or determine the ways in which the produced knowledge would flow through the system (in terms of design, inputs, synthesizing, and end-use).

These concerns and possibilities about KIAP's loss of control because of SAON's comprehensive aspirations are not addressed within the available documents and information about SAON. The available texts are vague about these concerns, despite SAON's espousal of "coordination, collaboration and communication" (SAON n.d.: 3) amongst its monitoring sites and networks. Seen in this light, the stakes for knowledge are high: control by Arctic indigenous peoples over KIAP's nascent relationship with an emerging, dominant knowledge system could be lost, even though SAON claims that it includes this knowledge and requires it to fill gaps in observational knowledge.

Finally, perhaps the most self-evident way that SAON could limit KIAP's control over its relations with SAON is through resources. KIAP-directed, local observation sites and systems simply do not have the same sort of funding as their larger, state and research-institute based counterparts (who would provide more funding to SAON). Larger networks (like DAMOCLES for example), the dominant building blocks within SAON, will bring with them far more funding and visibility than smaller projects based on KIAP. Thus far, SAON has yet to propose a compensatory strategy. Further, it is natural to expect that resources will be directed towards efforts that facilitate the development and creation of SAON. Will applicants for funding have to position themselves as contributors to SAON's system-building efforts, as opposed to contributing to their own knowledge needs? Without an explicit commitment to fund Arctic-monitoring projects based on KIAP, the building of SAON *per se* might easily absorb a majority of resources. The concentration of files, organization of data portals, and the organizational and bureaucratic power that SAON will require will be difficult to resist in funding decisions, so long as SAON conceptualizes itself as offering a comprehensive system with no exterior. The consequence could arise that KIAP projects will not receive the same level of funding.

Regardless of the purposes of funding, will indigenous Arctic peoples'

projects be forced to join SAON, in order to have KIAP broadly disseminated to other communities or policy-makers? While participation in SAON is voluntary, it may only be in name only. Without the SAON imprimatur, would KIAP voices be heard outside of indigenous Arctic peoples' communities? Faced with the possibility of an asymmetrical distribution of resources, KIAP would have little choice but to join a system that wants to be comprehensive.

Taken together, SAON's claims of including KIAP as a part of its comprehensive plan means that it offers no boundaries to delineate what is inside/outside the system. Instead, the relations of knowledge (as described above) would position KIAP as an exterior site. As suggested above, SAON's comprehensive and inclusive approach to KIAP fails to recognize the status of the later as exterior to the system. We contend that such recognition should follow from the establishment of relations between SAON and KIAP (as described above). This means that KIAP, whether organized into observational systems or occurring on an ad-hoc basis, would constitute this outside and be recognized as subject to its own meanings and own control. This site of KIAP would be recognized as setting its own terms of involvement of SAON and Western science, a relationship that would be constantly negotiated and reconsidered with indigenous actors determining which KIAP would be shared and/or integrated and scaled up into SAON, should they choose to do so.[14] KIAP could also retain the option to stabilize and normalize the relationship should it also choose to do so. What would therefore be unique in this situation is that SAON would acknowledge that its own knowledge has boundaries and has relations with KIAP as something outside of itself, not included within its system. This exteriority of KIAP would not render it an "Other" understood as subjugated in comparison to SAON and Western science, rather it would consciously recognize that influences and effects on KIAP by Western science and science systems are very real and powerful.

Knowledge relations would therefore be understood as comprising lateral, not hierarchical exchanges. KIAP would also then have the chance of avoiding being swept up into a comprehensive system and outflanked, decontextualized, or outdone by other observational systems with more resources. To be sure, the local site of knowledge would be outdone in terms of resources. However, if kept within the context of continually negotiated, lateral relationships, KIAP has a better chance of avoiding being fully outflanked within the confines of a comprehensive system. Questions about inequality between forms of knowledge and decontextualization of KIAP could also be asked through these relations of knowledge.

Posing these questions about KIAP and relevant relationships of power

and knowledge does not preclude the possibility of developing aspects of the knowledge relations that would allow for KIAP to "travel." Technical devices allowing for connections between forms of knowledge and the mobility of knowledge such as maps and observations lists (Watson-Verran & Turnbull 1995: 117) would be shared to allow knowledge to be located out of its time and place without becoming decontextualized and swept into a hierarchical relationship.

To summarize, our concerns about SAON do not stem from the judgment that its planners intend to capture and colonize KIAP through their network of networks, in the end helping undermine it. Our apprehension is that SAON's starting point of inclusivity and comprehensiveness—regardless of intent—fails to recognize the difference that is constituted by KIAP. In consequence, KIAP would be treated as a component of a unitary, Western science-centred system in the Arctic region, rather than a knowledge system in its own right that may or may not be part of SAON—a choice to be left to Arctic communities, not SAON planners. Even if the choice is not to join SAON, a community could still provide relevant monitoring information on terms it chooses and settles with SAON. While the stakes of SAON's comprehensive approach may not directly impact the existence and status of KIAP for Arctic peoples *per se*, these stakes may affect the possibilities of Arctic peoples to ensure that there are "audible" and recognized voices speaking about the ecology of the Arctic based on legitimate knowledge practices from somewhere, institutionally, other than within the relatively massive system—one whose future governance and uses are not ultimately known.

Comprehensiveness Obviates the Need for Exterior Monitoring

Elinor Ostrom has pointed out that in the absence of a centralized governance system operating with complete information, monitoring is most effective as a cooperative endeavor, where actors in a given sphere of activity are supplying information and monitoring themselves and others (Ostrom 1990: 94–100). While SAON's scope and range is profoundly broad relative to the limited spheres that Ostrom focuses on (such as local fishing waters), there is no inherent reason why the value of a cooperative approach to monitoring cannot still apply. That is, unless, there is no exterior from which others can monitor it. This is precisely the case with SAON: it will be a comprehensive system that has no exterior from which local communities can monitor SAON itself, eliminating the possibility for a cooperative approach by obviating the need for external monitoring. Another approach to

cooperative monitoring is what can be labeled distributed monitoring (see Latham 2006). With distributed monitoring, not only is monitoring capacity and agency distributed among different actors, but also these actors are operating from distinct, exterior, institutional positions. Distributed monitoring capacity already exists to some degree in various national and international sectors. Consumer watch dog groups, human rights organizations, fair trade advocates, and environmental activists are among the actors—in addition to independent research institutes—that challenge official data and assessments with their own in various sectors regarding issues such as product safety, free speech, poverty, and environmental degradation.

SAON's designers are silent on the question of whether or not there will be any channels for distributed monitoring.[15] This suggests that the possibility of facilitating oversight and monitoring of SAON (and thereby contestation of its operation) by Arctic indigenous peoples is not being considered as a fundamental dimension of strategic planning for SAON. In other words, there is no discussion of putting in place capacities and relations to monitor SAON's monitoring work, once SAON is operational. Without monitoring from a space outside of SAON's boundaries, forms of local opposition to SAON's knowledge production become unlikely given the lack of resources in communities, especially in the face of the large-scale monitoring system of systems SAON is intended to be. For SAON, the opportunity for less powerful local actors (in terms of resources and access to decision-making structures) to participate not only in the supply of observational data and information, but also the monitoring of others' activities, are crucial to ensure that Arctic environmental governance has beneficial outcomes for all of the Arctic's peoples.

SAON's logic of comprehensiveness means that there is no built-in requirement for monitoring SAON's activity from the outside, because *there is nothing to be recognized outside of its boundaries of knowledge*. Not only would its knowledge be seen as comprehensive, but also official, carrying with it the weight and authority of the Arctic Council, IASC, WMO, and SAON's constituent building blocks. However, the existence of bodies of knowledge located outside of SAON can become a good in itself if it challenges official data and information to be more inclusive, accurate, and transparent (Latham 2006). This is an especially important feature given the close proximity between science and positions of economic and political power, and science's ability to produce new elites (see Jasanoff (ed.) 2004: 5) who may articulate particularistic, perhaps even parochial interests.

It could be argued that monitoring SAON from an exterior position is not necessary. The comprehensive nature of SAON's plans means that SAON itself would provide the solution: coordinating and collaborating

data inside SAON to eliminate or improve poor monitoring practices and/or outlying results.

Assuming that SAON's comprehensiveness would lead to effective self-monitoring within the boundaries of its own knowledge raises questions that need to be addressed: what if the very knowledge and information that needs to be challenged comes from projects undertaken by larger networks, projects backed by nation-states, or building blocks whose produced knowledge support hegemonic groups such as decision-makers and private firms? How specifically would this monitoring/or oversight take place and how would accountability be structured?[16]

Should KIAP be integrated into SAON without creating a space for monitoring that exists outside of SAON (beyond oversight by its controlling actors and institutions), then it is difficult to conceptualize who or what will challenge SAON's official data. Because this data is legitimized by structures as diverse as the IASC, Arctic Council member States, the Global Ocean Observing System and National Science Foundation, there is a clear need for SAON to be more explicit about its commitments to how its monitoring operations will be monitored and how KIAP and indigenous Arctic peoples will be accounted for in such a plan.

We suggest that the relations of knowledge conceptualized above are a useful starting point for outside monitoring. Such a relation provides the initial recognition that there is something existing exterior to SAON that has the knowledge and capability to monitor the data and information that SAON produces. This sort of relation would ensure that there is something existing exterior to SAON which has the knowledge and capability to monitor the data and information that SAON produces, while engaging in a lateral relationship with SAON on its own terms. Within these spaces, KIAP would not just participate in monitoring, but have a clear and self-defined role and capacity to monitor the monitoring. Positioning KIAP as outside of SAON yet entering into a knowledge relation with lateral exchanges means that indigenous Arctic communities could monitor and potentially challenge SAON's work, working towards limiting the repression of local, indigenous knowledge that subverts Western logic and science (see Cruikshank 2005; Tester & Irniq 2008). Monitoring SAON's work therefore involves knowledge-based contestation, an opportunity to challenge claims based on Western scientific experience, and a positing of alternative knowledge claims that could be incorporated and represented within the knowledge relations, with control over this KIAP continually residing with indigenous Arctic peoples.

KIAP's exteriority in turn relates to another advantage that a system designed relations of knowledge offers: that the position of knowledge out-

side SAON and the ability for KIAP to monitor SAON (and itself) could enrich the knowledge produced both by SAON and local observations standing outside of it. Comparison of observations about the atmosphere, ocean and sea ice between SAON and KIAP external sources for example, would deepen knowledge about these areas for both sides. While this incorporation of KIAP is already underway within SAON's observation systems, the difference between what is planned by SAON and the relations of knowledge conceptualized herein cannot be overstated: the lateral, locally-self determined relationships permanently in-process of (re-)negotiation shape knowledge production in ways that are dramatically different than in systems that are planned around comprehensive status.

Barriers to Appropriable Data and Information

Recognizing KIAP as situated outside the boundaries of SAON would require SAON to communicate and make accessible and useable its knowledge to local communities as an equal partner (as opposed to integrating KIAP into its structure). It would be nice to believe that information technology offers a straightforward solution and that linking SAON's website and networks to other sites and networks that are based on KIAP and are exterior to SAON. In principle this practice could build up relations between SAON and the outside, and also allow for comparisons and mutual use of SAON and non-SAON data.

However, in its proposed design, SAON would limit the ability of local users from creatively appropriating and manipulating its data. This is because SAON seems intent on allowing access to its data and information only within the parameters of its own system, controlling which observation sites in the Arctic, networks, and data sets/areas of concern (such as biotic/abiotic data, cryosphereic, data etc.), can be accessed. By articulating KIAP's use of data as a matter of "free, open, and timely access to high-quality data that will realize pan-Arctic and global added-value services and provide societal benefits" (SAON 2008: 5), SAON manages to constrain use to the existing parameters and context of SAON itself.

In this case, open means to convey that access is available to all parties. But another meaning of openness relates to the practices of open source software development, where being open means being able to appropriate elements of the system so that they can be configured differently to fit needs and logics not otherwise intended by system designers. Anthropologists articulate similar logics with the concept of counterwork, which describes how non-Westerners appropriate knowledge and practices from Western systems and relocate and re-transpose them within their own knowledge systems (see Parkin 1995; Arce & Long 2000; Escobar 2008).

Because SAON is not-yet fully operational, the inability of users to appropriate its data can only be assumed at this juncture. SAON's lack of stated commitment to the importance of appropriating data suggests that it is justified to be skeptical about its understanding of end-use. First, SAON has yet to release a statement regarding the importance of a system that can easily be manipulated by users who can shape SAON's cyberinfrastructure to their own self-defined ends. In the absence of a clearly defined statement to build appropriation into the system, SAON is not only precluding the creative and innovative use of data and information to take place, but it is also excluding actors who would not use the data in the "templated" way, which ostensibly would privilege scientists and government.

Second, SAON will likely base its data portal on the data portal presently used by AON, the Cooperative Arctic Data and Information Service (CADIS).[17] As mentioned above, AON is an already-operational, U.S. initiative of the National Science Foundation that incorporates numerous observation projects in the Arctic. For the information and data produced by AON's projects, CADIS already provides a

> web-based service that enables data discovery, access and use by providing a metadata archive and portal for data discovery, a data and products archive, and tools for data manipulation and analysis. (AON 2010.)

For SAON to use (or at least build upon) CADIS makes sense, as few networks-of-networks exist, and there cannot be many options for cyber infrastructure that are able to answer the informatics challenge of coordinating and integrating existing networks into one cyberinfrastructure. CADIS may be the closest system available to organize SAON's metadata. Therefore, it seem likely that SAON will decide to use AON, for the very reason that it offers a massive comprehensive organization of networks, and SAON needs a ready cyber infrastructure to handle all its data and information. Moreover, there is no publicly-available information provided by SAON that directly addresses the possibility that they will develop their own cyber infrastructure.

Concern about the usability of AON stem from the fact that the AON/CADIS platform does not appear to allow for the appropriation of data by end-users. AON's search fields include geographic bounding, principle investigator, discipline, instrument, platform, location and projects. At first glance, these appear to provide a wide variety of applications for users. However, the system appears to be oriented to scientists, rather than local users. These fields narrow the opportunities users have to think about the ways that they would like to define and use the data. Creative use is there-

fore limited and more likely, excluded. Further, while users can contribute and edit metadata and data, they must sign up for an account and be subject to an approval process, to determine which data sets users will be editing, with the consequence that access is not as free or as open as first appears. Instead, local users need to be able to determine what their data/informational needs are and what is required from AON in terms of accessing data. Overall, if SAON will depend, to a large part, on the AON/CADIS system and model, and does not articulate a commitment to a versatile and meaningfully open system, it will head towards a brittle construction that is not easily appropriated by community users.

Alternatively, a system that is appropriable is one in which the users could design their own logics of use and access. In turn, users can contribute to the system itself, becoming producers of technology and observational data and information through appropriation (Eglash 2004). Systems that have creative appropriation designed into them include the Barrow Area Information Data Base-Internet Map Server (BAID-IMS). Through BAID-IMS, indigenous Arctic peoples are creatively using GIS technology in unanticipated ways to distribute sea ice information via BAID-IMS to

> better understand and survive in an extreme environment, which is seeing the impacts of climate change in terms of coastal erosion, flooding, permafrost melting, increased intensity of storm events, and so forth. (BAID-IMS 2010.)

Indigenous Arctic peoples also contribute to systems knowledge about the ice and the BAID-IMS system is flexible enough to adapt around new knowledge. BAID-IMS offers but one example of a system that allows users to appropriate technology for their own needs, and enables them in turn to shape this technology in terms of how it is used and the knowledge it draws upon.

In sum, by creatively appropriating information and data, KIAP is not reified or seen in a pure sense within the relations of knowledge proposed in this study, because it is assumed to be in a state of interaction with other forms of knowledge outside of its own boundaries. By bearing this in mind and revisiting its design plans, SAON could design a system that draws on an open-source model whereby users continually re-shape and re-define not only publicly-available data, but how data is used (often in unanticipated ways) and modified by users to suit their own needs. Such as system, modeled along the lines of the Linux operating system or Mozilla Firefox web browser, would be both pliant and versatile for SAON and its potential users, and could provide a model for other data and information systems designed in the future.

Conclusion

Large-scale systems have their place in knowledge production if the boundaries which define what knowledges they include/exclude are permeable and shift and are resistant to absorbing and colonizing knowledge which stands outside of it. Attempting to make SAON a comprehensive system means that now useful knowledge can exist outside of its boundaries. Instead, its claims to being all-inclusive—no matter how well-intentioned—should be re-evaluated against the possibility of generating negative consequences for KIAP. These include the loss of control over the relations between KIAP and a large-scale system-of-systems like SAON, by limiting opportunities for local communities to be able to monitor knowledge-production in their world, and by closing off opportunities for local communities to generate and use data in ways that they deem appropriate for their uses.

An alternative approach is one in which SAON engages in relations of knowledge with KIAP, with KIAP defining its own relationship with SAON, and both forms of knowledge respecting the lateral boundaries between them. To do this requires not only a top-level commitment by SAON's architects and potential decision-makers, but also willingness amongst subsystems, scientists, and state representatives. In doing so, the content and practice of environmental monitoring, as well as the relationship between forms of knowledge, could potentially be recast and set up as a model for other regions beyond the Arctic. Whatever the fate of SAON, the preceding analysis speaks to a particular way of thinking about knowledge production and system building that is evident in the SAON process and remains prevalent in the world of Western science.

NOTES

[1] The nineteenth and twentieth centuries witnessed a remarkable transformation in governance: states in the West gained new capacities in the monitoring of their populations and made such capacities central to policy-making across an ever expanding and deepening range of social and economic life within a territory (Scott 1998: 90–102). The logics of monitoring were increasingly applied transterritorially through organizations such as the World Meteorological Organization with the aim of monitoring phenomena on a global scale (Edwards 1997).

[2] See, for example, Nadasdy 1999; Mignolo 2000; Eglash 2004; and, especially, Delgado & Strand 2010, which explores the problems of inclusion in two cases in Latin America and Scandinavia.

[3] We acknowledge that the term *local user*s is problematic insofar as it cannot capture the range of subjectivities located in Arctic communities (including indigenous and non-indigenous populations).

[4] The construction of the Global Earth Observation System of Systems (GEOSS) should be completed by 2015, according to the Group on Earth Observations (GEO). With up-

wards of 100 founding government and institutional members, GEO was established in 2005 following the World Summit on Sustainable Development with the goal of forming GEOSS as a global system that will systematize and synthesize observing networks and the information and data that they provide (see GEO 2010).

[5] It is beyond the scope of this essay to fully elucidate the identification of winners and losers, though the arguments that follow incorporate these issues in an implicit manner.

[6] A thoughtful description of a totalizing field of social power, associated with the colonizing culture of the modern capitalist state in the Arctic is in Tester & Irniq 2008: 51: "We have used the concept of totalization, after Sartre (1991), in reference to a process whereby attempts are made to bring all aspects of life (spatial, temporal, social, and economic) into line with a dominant or overarching logic: in the case of Canada, that of a modern capitalist state committed to 'the idea of progress.'"

[7] For clarity, these statements are to engage SAON's representation of KIAP and are not meant to imply that SAON's inclusion of indigenous actors in its planning process or the stated equality between levels of observation are actually equal.

[8] Martello (2001: 126) incisively explores the tensions surrounding the issue of storage of traditional and local knowledge within databases. The rationale for this storage is to preserve knowledge, to ensure that it is not abandoned or lost, on account of its "low economic value, the inferior status of women who use traditional knowledge, and perceptions that 'modern' knowledge and technology are superior to 'traditional' forms". Drawing on Agrawal (1995), Martello discusses how databases represent local and indigenous knowledge as therefore "frozen in time" (Martello 2001: 126), yet proponents of these databases also articulate that knowledge of the world is constantly in flux, questioning how "assumptions that traditional knowledge is extractable, portable, and amenable to preservation can be reconciled with claims that traditional knowledges are dynamic, open to many interpretations, and embedded in people and places" (Martello 2001: 127).

[9] To this end, there has been much controversy over the study of climate change. Audits are underway within both the Royal Society of London and the InterAcademy Council regarding climate science.

[10] For a list of networks and programs that utilize KIAP, see SAON 2009*b*.

[11] For a discussion of how knowledge can also be a resistance practice, see Tester & Irniq 2008.

[12] The Stockholm workshop brought together representatives from Arctic national governments as well as non-state governmental actors (such as Lars Anders Baer, President of the Swedish Sami Parliament and Lene Kielson Holm of the Inuit Circumpolar Council) representing indigenous peoples' communities and interests, scientists representing various projects and research centres (including the Stefansson Arctic Institute and the National Science Foundation) to discuss user needs, identify presently operating observation networks and the spatial, disciplinary, and temporal gaps that exist between these networks (SAON 2007: 5).

[13] This is not to privilege the local scale but to question the scaling-up envisioned by SAON. See Engel-Di Mauro (2009) for an exploration of what is at stake in the choice of scale in analysis, and Zulu (2009) for an analysis of the politics of scale in relationship to community-based knowledge practices.

[14] As these knowledge relations would be based upon control of KIAP by indigenous actors, it against the thrust of this paper and beyond its scope to determine which indigenous actors (indigenous peoples' organizations and actors such as Permanent Partici-

pants in the Arctic Council) or current governance structure would engage with SAON as representative of KIAP.

[15] Certainly, this may change as SAON proceeds apace with its formation. Even with a clear articulation of a monitoring capacity, these observations remain pertinent as they comment on a particular logic that underlies system building that will likely remain relevant as more and more Western science systems are constructed.

[16] Taking a hypothetical example, one of SAON's possible components or building blocks, SIZONet (Seasonal Ice Zone Observing Network), which is part of the ELOKA (Exchange for Local Observations and Knowledge of the Arctic) project, carries out ice observation in Alaskan communities in order to track sea ice change "from a user perspective" (ELOKA 2011). What if their data and information clash with that of another potential SAON component, the USGS (US Geological Survey)? In this hypothetical situation, SIZONet would be seriously limited in its ability to challenge and contest the data that the USGS produces in the event of a conflict over the meaning and application of data and information. The possibility that local communities and smaller, more participatory networks could be outflanked in challenging the methods, results, and applications of information found in larger SAON projects is disturbing. Without something situated outside of SAON, how would knowledge then be contested?

[17] SAON's Helsinki Workshop data management breakout group, which met in October 2008 to discuss data centers and portals already in use in Arctic observing bodies and the need to develop a data portal, indicated that SAON will not consider AON/CADIS exclusively (SAON. Helsinki Data Management Breakout Group 2008: 2). However, there is yet to be any sort of committed statement about the specific alternatives to CADIS that SAON would consider.

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The Technology Imperative of the Cree

Examining Adaptability and Livelihood in Northern Ontario, Canada

ABSTRACT In this article we discuss how the incorporation of selected technologies (i.e., outboard motor, snowmobile) in Northern Ontario profoundly and irrevocably transformed two Cree nations located in the Hudson Bay Lowlands. We demonstrate how this technological integration has provided two remote First Nations in Canada with the ability to adapt to biophysical and socio-cultural changes, thereby sustaining traditional livelihood and providing food security. Interviews conducted in 2006–2010 with the Weenusk First Nation at Peawanuck, and the Washaho First Nation at Fort Severn are used to contextualize the discussion and answer the following research questions: (a) Are a greater or smaller number of people in these two First Nations engaged in subsistence behaviour today than in the past?; (b) Are these harvesters more or less successful?; and (c) Are levels of subsistence consumption different? The findings indicate that while less people are generally participating in traditional subsistence activities, access to traditional foods due to technology remains, for the time being, the same. The sustainability of these activities on the long-term is examined in the conclusion.

KEYWORDS adaptability, food security, health, livelihood, technology, well-being, Ontario, Cree

"Technology is the metaphysics of our age; it is the way being appears to us" (Horowitz & Grant 1969: 3). By quoting Horowitz and Grant, Francis (2009) poignantly reminds us that technology has become over the course of the twentieth century the "most pervasive and dominant force in the modern world," and that for a generation of thinkers "it became for them an imperative" (Francis 2009: 1). Few would argue that, in the shaping of the modern north, technology and the accompanying industrialization have not had a profound impact on health and community well-being (see Coates & Powell 1989 and Morrison 1998 for a discussion on these topics). In one of the earliest such observations, Innis (1925) observed during a series of research trips to the Mackenzie basin in the early 1920s, the "impact of limited transportation technology on the cultural milieu" of the areas he visited. His conclusion, at the time though, was that limited transportation technology, which locals he argued could have cared less about anyway, "resulted in it being a region on the margin of the dominant centre of central Canada" (Innis 1925: 152).

Innis's perspectives—centred around a dichotomy between those who favoured the "moral imperative of technology" and by those who saw technology as a threat that would break "down communal ties that were important for the well-being of society and by undermining moral and spiritual values that had been the underpinning of Western civilization" (Francis 2009: 2). Coates and Morrison (1992), dealing specifically with the provincial norths, have argued that improvements in transportation like the jet plane "helped tie the Provincial Norths into the national transportation network in Canada" (Coates & Morrison 1992: 90). Yet, while Coates and Morrison (1992: 90) comment that technology such as the snowmobile "revolutionized winter freight transport to remote communities" and, after 1959, "personal transportation," it has still been tied to the concept that "northerners were no longer relegated to the conceptual sidelines of North American life."

In a similar light, American anthropologist Pelto (1973), in his landmark study on the Skolt Sami in Finland, suggests that the "snowmobile revolution" irrevocably transformed traditional livelihoods and altered socio-cultural practices. In the four decades since its first publication, however, few researchers have challenged this conclusion. Canadian researchers in particular have built upon this work, and that of Innis (1925), and frequently noted that the "snowmobile revolution" diminished "bush discipline" in Northern Canada by providing greater opportunity for displacement, resulted in the over-harvest of certain wildlife species, and in some cases lessened the need for economic interdependence and cooperative kinship (see Berkes *et al.* 1995). Arguing against the interpretation that aboriginal communities

are passive recipients of technology, this paper builds upon Bishop's (1984) contention that post-contact adaptations by the Cree in this instance, are the synthesis of the old and the new and are not necessarily radical departures from traditional practices resulting in discontinuities with the past. The paper demonstrates how the selective integration of certain technologies like the outboard motor (decades ahead of the snowmobile) and the snowmobile, profoundly and irrevocably transformed Cree livelihood, yet also provided the tools for communities and individuals to adapt to biophysical and socio-cultural changes, thereby ensuring the viability of traditional livelihood and cultural food security. In-order to better understand these transformations, three research questions guided the study:

a. Are a greater or smaller number of people in these two First Nations engaged in subsistence behaviour today than in the past?
b. Are these harvesters more or less successful?
c. Are levels of subsistence consumption different? How does the consumption of different foods affect food security issues in the community?

In the next section, we provide an overview of climate change and community health while also describing the methodological approach used in the study. This is followed by a description of the two communities, a discussion pertaining to the findings, and the conclusion.

Climate Change and Community Health

According to a scientific report produced by Arctic Climate Impact Assessment (ACIA), warming temperatures will increase the vulnerability of many Northern communities to invasive species, permafrost melting, and other environmental changes. As Knotsch and Lamouche (2010: 1) recently reported: "Changes in climate and weather events in the Arctic and their subsequent effects on the biological systems of the region have impacts on food security and economic well-being." More than 70 per cent of northern aboriginal[1] adults reported harvesting natural resources through hunting and fishing and of those more than 96 per cent do so for subsistence purposes (see Furgal & Seguin 2006 for further details). The ability to adapt and "overcome changes in access to or availability of country food resources [...] is significantly influenced by an individual's access to economic resources and technology" (Furgal & Seguin 2006: 1968). The ability to invest in new "equipment for hunting and traveling (e.g., snow machine, four-wheel all-terrain vehicle, flat bottom or larger boat)," satellite phones and navigational tools such as GPS, increases the capability of an individual to access

often unpredictable landscapes while still providing healthy foods to family and community members (Furgal & Seguin 2006).

In the case of community health and well-being, increased rates of obesity have been linked to decreased opportunity for engaging in harvesting activities (Young & Katzmarzyk 2007) and a lack of access to country foods can also affect people's mental health by decreasing social ties (through the sharing of food) and decreasing an individual's confidence about her or his traditional knowledge (see Waldram *et al*. 2006). However, previous studies examining the impacts of technology on indigenous communities have tended to overlook or disregard the limitations of previous studies, whether they be ethnographic or surveys, and largely discount the resilience of aboriginal communities. In particular, by failing to acknowledge the sociopolitical context and discounting the incorporation of technology into livelihood and well-being, researchers often perpetuate the notions that culture is static and non-adaptive, thereby essentially denying indigenous peoples of agency (Bernard & Pelto (eds.) 1987).

Although often overlooked, the physical nature of harvesting activities also plays an important part in providing exercise and outdoor activity. Further, the general well-being of individuals is also impacted by their participation in food harvesting and collection activities. For example, the act of hunting or gathering requires a collective way of harvesting, processing, distributing and preparing foods, reflecting values of cooperation and sharing. Harvesting activities strengthen social connections between family and community members. From this perspective, the incorporation of these technologies by the Weenusk First Nation at Peawanuck and the Washaho Cree Nation at Fort Severn, two Cree communities located in the Canadian sub-Arctic, is simply a series of adjustments in livelihood to various environmental and social changes.

In order to examine the various impacts (both positive and negative) of outboard motors and snowmobiles in Cree society we use a combination of bio-history (Krech 1984; Ray 1999), environmental sociology (Bell 2004; Gould & Lewis 2009), and an ethnographic approach consisting of participant observations and 22 semi-structured interviews conducted with 12 harvesters and 10 Elders in Weenusk between 2007 and 2010 was undertaken. Of the 24 participants in Washaho (19 Elders, 5 younger harvesters), all were defined as still active in *pimachiowin* (traditional Cree livelihood). As stated earlier, the following research questions were asked:

a. Are a greater or smaller number of people in these two First Nations engaged in subsistence behaviour today than in the past?
b. Are these harvesters more or less successful?
c. Are levels of subsistence consumption different? How does the consumption of different foods affect food security issues in the community?

The analysis for this study was conducted through a deliberate coding approach highlighting any discussion regarding mechanization and/or technology. The interviewees are cited anonymously to protect their identity.

Weenusk and Washaho. Historical Backgrounds

The peoples of Weenusk and Washao are the *omaske.ko.w* Cree (meaning muskeg or swamp people in the Cree language). They have lived in the Hudson Bay Lowlands for countless generations. Although the Cree's traditional territory extended throughout the Hudson and James Bay Lowlands of Quebec, Ontario, and Manitoba, subsistence activities were often focused on in coastal and waterway areas and guided by seasonal patterns of fishing, hunting, and trapping. Fish, such as whitefish and sturgeons, were collected along major waterways in the spring and fall seasons, while river estuaries provided hunting (shorebirds, migratory birds), fishing, and foraging grounds in the spring and summer seasons (see Ohmagari & Berkes 1997). In the fall and winter, Cree families returned inland towards their traditional hunting grounds to hunt caribou and moose, ice-fish, and trap furbearing animals (see Lytwyn 2002).

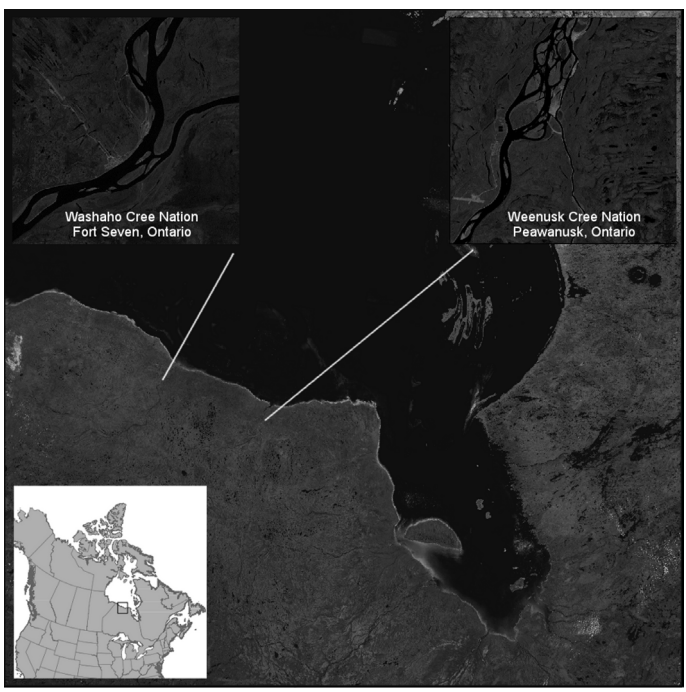

Fig 1. Map of Washaho and Weenusk

European contact with the coastal Cree occurred relatively early. In fact, it was a solitary Cree hunter in 1610 that welcomed Henry Hudson to *Wînipekw* (the large muddy waters), the large body that would eventually bear the European explorer's name (Mancall 2009). In many instances, contact with Europeans provided the *Wiinibeyk Iiyuu* (coasters or Coastal Cree) with the opportunities to incorporate equipment and tools made available through the fur trade quite quickly (George & Preston 1987). With the establishment of trading posts in the region beginning in the eighteenth century, more frequent and prolonged contact began and some of the Cree families were encouraged to become more sedentary and increasingly dependent on manufactured goods (Graham 1988). The "home guard" Cree, as they became known to Europeans, became the "middle-men" of the lowland trade (Beardy 1996; Bird 2005; Lytwyn 2002).

Consistent dealings with federal officials occurred as various Nations began ratifying Treaty 9 and its addendums between 1905 and 1930, while dealings with provincial officials began to occur after the Second World War (see Beaulieu & Southcott 2010; Long 2010). The 1950s and 1960s can be defined as the "military era" when infrastructures, the wage economy and mechanization (typified by outboard motors and snowmobiles) appeared and more localized lifestyles through permanent dwellings were encouraged (Graham 1988; Lemelin & McIntyre 2011). This era was followed by the conservation and protection period in the 1970s and early 1980s (highlighted by the establishment of Polar Bear Provincial Park in 1970) to the mixed economy of the modern era (Lemelin *et al*. 2010*b*).

While steamships were actively used throughout Northern Canada during the late nineteenth and early twentieth century, the first transportation revolution occurred with the introduction of canoes and skiffs powered by outboard motors. The mass production of outboard motors introduced in the North American market in the 1920s, and in the Canadian sub-Arctic in the 1930s provided an opportunity for Northerners to incorporate this technology into traditional lifestyles (Hunn 2002; Montevecchi *et al*. 2007; Piper 2009). Whereas few individuals initially had the capital to purchase outboard motors, by the 1960s almost everyone in Weenusk and Washaho had one (interview with Cree Elder from Weenusk, 2007). Since Cree families could now travel tremendous distances both inland and along the coastlines, the outboard motors provided various opportunities to access new hunting and fishing territories, attend cultural activities in other coastal communities, and in some cases seek employment opportunities throughout the spring, summer and fall seasons.

Initially, Bombardier snowmachines were large and heavy enclosed tracked vehicles that were very expensive, and were used mostly by gov-

ernment and church officials. It would take several decades before snowmobiles (smaller tracked winter-vehicles made by Bombardier) and other snowmachines, were made especially for the winter conditions of Northern Canada. As Piper explains, the introduction of the snowmobile in the 1960s facilitated winter travel, since fishers instead of relocating in winter camps, could now live at home and visit their fishing areas on a daily basis (Piper 2009). While the snowmobile gradually became more popular in the Canadian north, some individuals preferring the versatility, safety, and efficiency of dog teams in the deep snows of the taiga or out on the coastal ice of the Hudson Bay, resisted this type of technology (interview with Cree Elder from Weenusk, 2007). Indeed, it was not until the late 1970s that the snowmobile became the preferred mode of transportation in Weenusk and Washaho (interview with Cree Elder from Weenusk, 2007). However, according to elders in both communities, by the mid-1980s everyone had one (see Table 1 below).

The two small Cree nations of Washaho (pop. 400) and Weenusk (pop. 250) (Statistics Canada 2009) are only accessible by plane, boat, and winter road (temporary roads that allow for transportation across rivers and muskeg when they freeze each winter) (see Fig. 1). Modern employment opportunities in government, health, education and tourism in both communities are complemented by traditional activities such as wood-cutting, hunting, fishing and trapping. The effectiveness of the mixed economy in Weenusk and Washaho has been praised by researchers and reporters who claim that Weenusk is a First Nation that successfully blends the old (traditional harvesting practices and sharing) with the new (cooperatives and tourism) (Lemelin *et al*. 2010*a*; Tsuji & Nieborer 1999).

Table 1. Chronology of technology.

Era	Early 1900s	1930–1950	1960–1970	1980s	1990–present
Subject	Treaty era	Military era	Protection era	Modern era	Mixed-economy
Marine travels	Canoes and/ or rowboats	Trap skiffs/ outboard motors	Wooden speed-boats/outboard motors	Fibreglass speed-boats/outboard motors	Fibreglass speed-boats/larger outboard motors
Land travels	Snowshoes, dog sled	Bombardier	Ski-doo	Various models	Liquide, multipiston, large machines
Monetary cost of technology	Low	High	Moderate	Moderate	High

Adapted from Montevecchi *et al.*, 2007

Being Well out on the Land

Among Canada's aboriginal peoples, cultural identity is often linked to key natural resources. For the Cree, the harvesting of caribou, moose, geese and various fish is an important element of cultural identity, which in turn reinforces personal and community pride and feelings of well-being (Lemelin *et al*. 2010*a*). The loss of biodiversity impacts the Cree to a greater degree because of their increased contact with, and reliance upon, the natural environment. This loss will have effects on, among other issues, the harvesting of foods (i.e., hunting and fishing rights), the use of natural resources (ecotourism, and others), the collection of traditional medicines, access to and control over traditional territories, as well as the storage and transmission of traditional knowledge, culture and information regarding these issues (Lemelin *et al*. 2010*a*).

While the traditional harvest of waterfowl, caribou, moose and certain fish remains significant in the Washaho and Weenusk Cree nations, challenges to healthy lifestyles at the biophysical and social levels are also occurring. As one younger harvester from Weenusk commented: "Limited access to caribou, seal, fish, berries and other 'country foods' leads to greater reliance on imported store-bought foods" (interview with Cree harvester from Weenusk, 2008). Indeed, since access to market food items is reliant upon shipment via air or sea, these modes of transportations, significantly increase the price and increases food insecurity in the Canadian north (Ford & Pearce 2010; Prowse *et al*. 2009).

Throughout much of the Arctic, the significance of traditional livelihood, and the subsequent sharing and distribution of wild foods acquired from these activities in this region, have been documented by researchers, government officials, and community members (Berkes *et al*. 1995; George *et al*. 1992; George *et al*. 1995). Some studies have argued that, through traditional livelihood and the use of traditional knowledge, some contemporary health problems in North American indigenous populations could be solved while at the same time increasing food security (Milburn 2004). For the Cree people of Northern Ontario, food security can be defined as:

> (i) food availability: sufficient quantities of food available on a consistent basis; (ii) food access: sufficient resources to obtain appropriate foods for a nutritious diet; and, (iii) food use: appropriate use based on knowledge of basic nutrition and care; adequate water and sanitation must also be considered in relation to northern environments, and their connection to socio-cultural practices. (World Health Organization 2011.)

Beyond the use of technology, the act of hunting or being "out on the land" in a modern context, requires collaborative efforts before, during and after the "hunt" (interview with Cree harvester from Wenusk, 2008).

Findings. Navigating the Technological "Imperatives"

Today, the snowmobile, motor-powered freighter canoe, and all-terrain-vehicle (ATV) are essential tools for harvesting, gathering berries, and collecting firewood in the northern aboriginal communities of Ontario and Northern Canada. It is these tools that assist in the provision of traditional country foods, which contribute greatly to the overall quality of life and sustenance of Northerners, while also providing the necessary mechanism to adapt to the rapid changes occurring in the circumpolar north (Weller *et al*. 2005).

The Kayahna Region Land Utilization and Occupancy Study (Kayahna Tribal Area Council 1985) conducted by the Kayahna Tribal Area Council in the early 1980s, for instance, reveals an entrenching of claims to traditional land areas and land use in the twentieth century that correlates with available data on land use patterns from the pre-contact and fur trade eras. For the families of Washaho (Weenusk did not participate in the survey), a 100 per cent participation rate was achieved. What the findings from the Kayahna study illustrate is that traditional livelihood activities like trappings throughout the Hudson Bay Lowlands have been widely transformed through mechanization.

From sharing vehicles and gas, to sharing feathers and hides from the fall harvest, many interviewees explained that reciprocity remains a central element of Cree society:

> I will buy nets because I don't sew. But I will buy them and they're expensive, but I need gas and I want to go check my nets. But in return I have these real tanned hides. And it's sort of like ... I think it bounces back, you know, where you get what you get from the land and how you turn it into use, especially with the people who have low income. Like sometimes my husband will take somebody that wants to hunt and yet can't afford gas or doesn't have a snow machine. You give them a snow machine, but in return they will help. Like they'll shoot caribou and they'll help loading it up and take whatever they get. In the end, it all turns out, you know? (Interview with Cree Elder from Weenusk, 2008.)

While participation in traditional harvesting activities remains high in both communities, mechanization has drastically reduced distances, or at least the time to travel great distances, and also reduced the time spent on observing natural occurrences and changes, and significantly increased costs (Shephard & Rode 1996). As one participant from Washaho (2009) explains:

> My first snowmobile was $595. It's sure not that price today. It's about $5,000 for a snow machine now. Anyway, the fuel prices are not cheap. [...] You have those snow machines and people are out of gas, and we're paying $2.45 a litre up here. Who can afford to go up hunting? You really have to count your pennies to do any activities. If you want to be a trapper, you need at least $10,000, you know? $5,000 for the snow machine and gas, the necessities is another $2,000 just to get there.

Increased mechanization, many participants noted, has also resulted in decreased physical activity. "People don't go on foot anymore. If they are trav-

Table 2. Impacts from technology on livelihood.

	DEGENERATIVE IMPACTS		GENERATIVE IMPACTS
Stressors	Description	Adaptors	Description
Dangerous	•Loss of machinery • Loss of life	Accommodating	• Overcoming spatial and temporal barriers
Dependence	• Dependence on external factors (gas, food) • High gas prices: $2.45 in 2007, $1.94 in 2009, limits the use of mechanized vehicles • Replacement parts which can also be costly have to be flown in	Agency	• "The ability to invest more in the required tools and equipment for hunting and traveling, or the access to other forms of transportation allows individuals to adapt more easily to changing environmental conditions." (Furgal & Seguin 2006: 1968.)
Disruptive	• Scares the animals • Creates pollution	Connections	• To the land, to culture, to ancestors
Disconnected	• People go to fast, don't notice the changes • Harvesters too dependent on GPS, don't notice the landscapes	Cooperation	• "Sometimes my husband will take somebody that wants to hunt and yet can't afford gas or doesn't have a snow machine. You give them a snow machine, but in return they will help. Like they'll shoot caribou and they'll help loading it up and take whatever they get. In the end, it all turns out." (Interview with Cree medical practioner, Weenusk 2008.)
Ecological exploitation	• Potential to over-harvest	Food security	• Meat in the freezer
Health	• People driving everywhere– decreasing physical activity • Pollution from the machine	Health	• "When we go hunting, it brings a good self-esteem if you're providing for your family and stuff like that. It's helpful. [...] Health and wellness are combined with the emotional."(Interview with Cree medical practioner, Weenusk 2008.)
Marginalization	• Elders and youth are the ones least likely able to afford the technologies	Safety	• Use of satellite phones, and social media to navigate changing landscapes

eling, they use the machines" (interview with Cree Elder from Washaho, 2009). Similarly, another interviewee reported:

> a long time ago we used dog teams and we could move around a lot and run. By using machines all the time there's more traveling and less moving. People aren't as active anymore. (Interview with Cree Elder from Weenusk, 2008.)

In addition, while land use intensity for hunting and fishing has increased since the introduction of the snowmobile and outboard motor, the efficiency and rapidity provided by mechanization and other technologies (including GPS and social media) is also disconnecting people from the land (Montevecchi *et al*. 2007). According to one Elder in Weenusk (2008), this has caused them to lose touch because "people like to get there fast, you know out there and back again. They go fast but don't see the changes." While transportation accidents and injuries were not specifically addressed by the interviewees and health professionals, they were noted during the first author's field seasons. Technological improvements in transportation and in fishing and hunting capabilities (e.g., longer ranging, faster vessels, automatic weapons) have helped to overcome traditional spatial (sedentary communities, commuting to traditional territories) and temporal barriers (i.e., seasonal or part-time harvest), by making certain traditional activities more effective or resilient to certain shocks and stressors. The generative outcomes from these technological innovations have been the continuity of food reciprocity, and in most cases, better health (see Table 2).

Improvements in technology also created breakpoints in wildlife exploitation that led to loss of traditional practices and in some cases, over-harvesting (Montevecchi *et al*. 2007). New technologies also represent significant initial investments and on-going cost for fuel (gas, oil) parts and repairs, thereby leading to increasing costs for the participation in traditional livelihoods and disenfranchising certain people from traditional activities, and a dependency on non-local goods. From this perspective technology results in "a loss of local autonomy through the growth of dependence on a worldwide system of resource allocation and political power" (Pelto 1973: 166).

However, to blame technology for disconnecting people from their livelihood simply because they are passive consumers, overlooks the fact that numerous policies (including transfer payments, compulsory school attendance) enacted by the federal government combined with sedentarization and village-life helped to make this way of living the norm. It also overlooks that the first technological revolution, the outboard motor, occurred several decades ahead of the so-called "snowmobile revolution." While Pelto (1973) highlighted the resource declines associated to the introduction of

the snowmobile, with the exception of a few scholars, little discussion is provided regarding resource declines and the introduction of the outboard motors in Northern Canada (Montevecchi *et al*. 2007).

In our overview of the first question, we found, much like Tester (2010) did, that the introduction of mechanized vehicles in the north, had profound social and ecological impacts. However, while focusing on the negative impacts brought about through the introduction of the snowmobile, researchers have overlooked the introduction of outboard motors several decades ahead of the snowmobile. Second, the Cree in many instances initially resisted the introduction of the snowmobile until the machines were engineered for the deeper snow conditions of the boreal forest and of course cheaper to purchase. This discussion suggests that the Cree were not simply passive consumers of technology, but would only introduce new technologies, when it was beneficial to them and to their traditional activities. Next we discuss how the findings provide insights into our research questions.

Discussion

The answer to our first question: are a greater or smaller number of people from these two communities engaged in subsistence behaviour? We noted that the outboard motor and snowmobile provided harvesters with greater opportunity to travel greater distances to harvest particular species of animals in shorter periods of time (i.e., over the week-end or during vacations). While sharing and bartering continues to ensure that most community members have access to some traditional foods, the costs associated to livelihood have made some of these activities prohibitive to elders, youth and some women. Therefore, while a majority of community members (approximately ¾ according to some sources) in both communities participate in such activities as fishing and the communal geese hunt, the exposure to these activities with elders and youth may be declining.

The answers to our second question: are harvesters more or less successful? suggest that the technology provides some opportunities to harvest some animals more efficiently, while in other cases, it also provides the opportunities to shift from one resource to another. For example, outboard motors and snowmobiles provide harvesters with opportunities to travel further and faster in less time. Thus, it is now possible to go hunting or fishing for the weekend, or during one's time-off from work, and still provide one's family and other members of the community with country food. Noted changes in migratory patterns in geese and caribou have been partially offset by increasing the harvest of other animals including moose (Peloquin & Berkes 2009; Sayles & Mulrennan 2010). Members have also adapted to these changes by incorporating GPS and satellite phones while on the land,

and exchanging information through social media and the Internet (Lemelin *et al*. 2010*a*). Access to the social media along with portable telephones suggested that some participants also create unique new challenges. Unfortunately, these challenges are beyond the scope of the present study.

In our third question we asked whether the levels of subsistence consumption are different? Participants noted that in spite of seasonal variations (earlier goose hunt), the Cree livelihood cycle in Northern Ontario persists. The one noted difference suggested by some elders is that moose is now the preferred species over caribou. Harvesters point out that one moose can feed an entire family for a month (depending on the size of the extended family), while it would take several caribous to feed a family during the same period. This rise in consumption of moose meat in the communities may also be due to accessibility, since moose can be hunted along waterways in the summer and fall months, while caribou are mostly hunted in the winter months with the aid of snowmobiles. Despite earlier spring goose hunts and fewer harvesters, the impacts on food security, for the time being, have not been profound, especially since the harvest has remained relatively the same (according to most participants), and most country foods are either smoked or stored in freezers throughout the year. What the following results suggest is that Cree livelihood and the culture of sharing in these communities is being transformed by climate change and globalization; these changes however, have not replaced all local traditions (Helander-Renvall 2010).

Conclusions

For the Cree, food security must be considered in relation to northern environments and the culture of sharing. Therefore, environmental changes that may reduce the amount of country foods consumed can result in increased likelihood of malnourishment and/or chronic conditions (obesity, diabetes, hypertension, etc.) through increased dependence on store-bought and generally highly processed foods. Such transformations will have profound socio-economic effects by further increasing the percentage of household budgets directed toward purchased food. Thus, the Cree relationship to traditional food must be recognized not only for its importance for physical health, but also for its connection to emotional, spiritual, social and cultural well-being.

Much like the Inuit and the Dene of Northern Canada and the Sami of Scandinavia, Cree livelihood has historically and continuously been challenged by socio-political changes, and the introduction of such technologies as the outboard motor and snowmobile. The Cree adapted to these changes by incorporating many of these new policies and technologies through

continuous activity on the land (Williams 2003). In contemporary Northern Canada, the "bush" for many Cree is a place of recreation and a place to reconnect to one's spirituality and one's ancestral ways; a place where food security and sharing is assured (George & Preston 1987). From this context, the technological revolution was in large part incorporated or even 'indigenized' into Cree livelihood (Carlson 2008; Sayles & Mulrennan 2010). Thereby, ensuring that livelihood, a fundamental component of healthy living, continued in Washaho and Weenusk. As noted elsewhere in the circumpolar north, similar adaptive trends can be seen where mechanized personal transportation is now required for all aspects of daily life (Das & Kolack 2008; Tester 2010). Further research is suggested regarding the increasing role of certain forms of technology as an adaptive mechanism to climate and social changes by indigenous communities. In addition, one aspect of technology that was not addressed in this article and which requires further investigation is who controlled the introduction of snowmobiles and other new technologies in the Canadian north. For example, did the Hudson Bay Company and certain government officials delay the technology for fear of environmental catastrophes (the disappearance of game and fur-bearing species) or did they encourage the use of these technologies to facilitate the incorporation of the Cree into Canadian society?

NOTES

[1] The legal definition of the term *aboriginal* from a Canadian perspective includes Indians, Inuit and Métis peoples. The term is used in the text when describing national studies or when discussing legal definitions. The term *indigenous people* is also used when referring to aboriginal people in an international context.

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Fishing Gear Used for River Lamprey *Lampetra fluviatilis* (L.) Catches

Documenting Rivers that Flow into the Baltic Sea

Part I, Sweden

ABSTRACT The river lamprey (*Lampetra fluviatilis* (L.)) is an anadromous fish that has a growth phase in the sea, then migrates up rivers mainly during autumn for spawning next spring. It is during this spawning migration the lampreys are caught in rivers. Lamprey fishing has been documented in the Baltic Sea region at least since the fifteenth century, and some of the fishing gear used has remained largely unchanged for hundreds of years. In recent decades however, new material has replaced wood, although the design of the gear is still often the same as before. In this study lamprey rivers in Sweden, Finland, Latvia and Estonia were visited and the lamprey fishing gear was documented. There are differences in the use of fishing gear both within countries and among countries as regards gear type and the ways in which the fishermen use different fishing techniques to suit the conditions found in various rivers.

KEYWORDS river lamprey, *Lampetra fluviatilis* (L.), river lamprey fishing, fishing gear, Baltic Sea area

Introduction

Fishing for river lamprey (*Lampetra fluviatilis* (L.)) has a long tradition along the European coastal rivers. The distribution of the species ranges from Southern Norway, via the Baltic Sea and North Sea coasts, in Britain up to Northern Scotland, around Ireland, along the Atlantic coast of France and the Iberian Peninsula and into the Mediterranean (e.g. Hardisty 1986*b*; Kelly & King 2001; Maitland 2003). The catches of the lampreys have decreased or ceased during the last decades, to some extent certainly because of changes in consumption habits, but also because of water pollution and obstacles to lamprey migration like hydropower stations and water reservoirs that have restricted access to areas of suitable habitats for spawning and larval development (e.g. Hardisty 1986*a*; Birzaks & Aberson 2011). There does not seem to be any important river lamprey fishing in coastal German and Polish rivers today, but in older times the river lamprey was a commercially exploited fish in for example the rivers Vistula, Oder, Elbe, Weser, and Rhine (e.g. Selegio 1926; Imam *et al.* 1958; Sterba 1962; Hardisty 1986*a*). According to Frimodt (1995): "River lampreys were once a common part of the European cuisine, from Portugal to Finland." In Britain, river lampreys are still fished for, but they are used as bait for fishing (Maitland 2003; Hardisty 2006; Masters *et al*. 2006), apparently not for human consumption nowadays, and that seems to be the case also in Ireland (Igoe *et al*. 2004).

However, in the Baltic Sea area there is still lamprey fishing for food with traditional fishing gear (Sjöberg 2011). Although river lamprey fishing is decreasing there too compared to a few decades ago, it is still performed in rivers emptying into the Gulf of Bothnia, that is, the northern part of the Baltic Sea, both along the lower sections of the Swedish coastal rivers (Soler & Nathanson 2006; Nathanson & Liby 2007; Sjöberg 2011), and along the Finnish side (Tuunainen *et al*. 1980; Tuunainen *et al.* 1986; Seppälä & Sarell 2002; Lehtonen 2006; Aronsuu 2011*a*; Aronsuu 2011*b*; Aronsuu 2011*c*; Aronsuu & Tuohino 2011; Kaski & Oikarinen 2011).

In the southern Baltic region, river lamprey fishing is still important, particularly in Estonia and Latvia (Ojaveer & Gaumiga 1995; Riekstiņš 1999; Saat *et al*. 2003; Kangur *et al*. 2005; Oras (ed.) 2007; Püttsepp & Järv 2010; Riekstiņš *et al*. (eds.) 2010; Birzaks & Abersons 2011).

The river lampreys are caught during their spawning migration into the rivers after having spent a growth period in the sea (for general information about the ecology of the river lamprey, see e.g., Hardisty & Potter (eds.) 1971; Hardisty 1986*a*; Hardisty 1986*b*; and Maitland 2003). The migration takes place in the autumn in the Swedish and Finnish rivers, although it is also possible to catch them during the winter (Sjöberg 1980; Tuunainen *et al*.

1980). The season starts in late August or early September and normally ends in late October or early November when ice forms. In Latvia and Estonia too most of the catches are taken during the autumn, mainly in October and November, but there the season is prolonged compared to the situation in the northern rivers. In the southern Baltic, spring migration has also been documented in some rivers (e.g. Imam *et al*. 1958; Tuunainen *et al*. 1980; Witkowski & Kuszewski 1995). The lampreys are active and migrate during dark nights. During daytime, the lampreys hide on the bottom, under stones and vegetation (e.g. Maitland 2003), so the fishing is in most cases adapted to this (but see the section about Estonia in Part II of this article in the forthcoming issue of the *Journal of Northern Studies*). In Finland the fishing season is between 16 August and 31 March. In Latvia the season starts on 1 August and ends 1 February, in Estonia there is a closed season between 1 March and 1 July. There are no general juridical regulations for lamprey fishing in Sweden.

Hardisty has concluded that:

> For any device aimed at catching upstream migrating fish, the basic design has been broadly similar throughout northern Europe. Any differences in fishing gear are mainly due to the materials available locally for their construction and the physical characteristics of the river in which they are used. In particular, variation in construction will be dictated by the strength of the currents, the width of the channel, the nature of the river bed and the rise and fall of the tides. Nevertheless, the fact that similar types of fish baskets are used in widely separated parts of Europe suggests that the principles involved were already appreciated in prehistoric times and that the design of these traps has since undergone very little modification. (Hardisty 2006.)

The generalisation above is certainly true also for the Baltic Sea area. The types of fishing gear have not changed much in most of the region during recent time, although the material of the gear varies (Storå 1978; Sjöberg 1982; Sjöberg 2011). However, there is a surprisingly large variation in the modifications and application of river lamprey gear in the area, and there are distinct differences both between and within the countries involved in this study as regards lamprey gear and its applications in different fishing methods.

Brinkhuizen (1983) and Gabriel *et al*. (eds.) (2005) make a distinction between active and passive fishing. Active fishing is when the fishermen search for the fish and try to catch it, while with passive fishing the fishermen periodically collect the fish that have been caught in traps or nets. Many lamprey river fishermen in this study have described catching lam-

preys manually, with mittens on their hands to get a better grip on the fish, and the use of nets to catch lampreys attached to hydroelectric plant dams. However, this article concentrates on gear for passive fishing in Sweden, Finland, Latvia and Estonia. The development of the gear as regards type and material during the last decades is demonstrated when possible. The differences between gear types and the methods for using them in different regions and countries are discussed in relation to local tradition, ecology of the river lamprey and physical conditions of rivers.

Thus, the present publication is focused on the fishing gear and how it is used in different regions and countries around the Baltic Sea. It is divided into two parts. In this first part the lamprey fishing in Sweden is described. In a following second part—to be published in the *Journal of Northern Studies*, volume 7, number 2, 2013—the situation in Finland, Latvia and Estonia will be treated. In an earlier publication (Sjöberg 2011) a more general view of the river lamprey fishing in the Baltic Sea area is presented.

Study Area, Material and Methods

The northern rivers in this study are situated at the Fennoscandian Shield, which encompasses roughly the northern half of Sweden, all of Finland, and the westernmost part of European Russia (Tockner *et al.* (eds.) 2009). Cushing *et al*. (eds.) (2006) include the Swedish and Finnish rivers involved in this study in the group Boreal Forest Rivers, which is a subdivision of rivers in the Nordic countries. It is characterized by thin soils overlaying granite/gneiss crystalline-rock substrate. The gradient of this group of rivers tends to be higher than for the southern groups, which has made them more suitable for hydroelectric power and is the reason why many of the rivers have been transformed into a staircase of power plants and their associated reservoirs (Cushing *et al*. (eds.) 2006). The consequence has been that formerly important lamprey fishing has ceased, as the migrating lampreys are stopped at the dams. Furthermore, large areas of spawning habitats and habitats for larvae development have been destroyed by river exploitation. The water level during the year is regulated and can vary dramatically during a 24-hour period, which further could negatively influence the areas where the lamprey larvae grow. Examples are the rivers Luleälven, Umeälven, Ljungan, Ljusnan and Dalälven in Sweden, and the rivers Kemijoki and Oulujoki in Finland. The fish ladders in those rivers are mainly constructed for salmon and trout, and are not suitable for lamprey, although some attempts to improve them have been made in Finland (e. g. Laine *et al*. 1998; Aronsuu 2011*b*).

According to Tockner *et al.* (eds.) (2009), the rivers in Estonia and Lat-

via belong to the Baltic and Eastern Continental Rivers. The larger rivers in this subdivision are meandering, lowland rivers fringed by vast floodplains. They are regulated to some extent, modifying flood regimes and suppressing the migration of fishes (Tockner *et al*. (eds.) 2009). The region is characterized by sedimentary rocks of the same type as the big islands in the Baltic Sea, like Gotland, Öland, and Ösel. The boundary between the sedimentary rock types in the south and the Fennoscandian bedrock passes through the Baltic via The Gulf of Finland and further towards the Lake Ladoga (Petersson 2008).

This article is based on visits to 36 lamprey rivers (Fig. 1). Interviews with lamprey fishermen and documentation with photographs of gear and fishing sites were made in 2010, when 12 rivers were visited along the northern Swedish coast. In Finland 9 lamprey rivers were visited in 2010, from the River Torneälven/Tornionjoki in the north (the border between Sweden and Finland) to the River Kokemäenjoki in the south (emptying on the coast at the town Pori). In 2011, 14 rivers in Sweden and 8 in Finland were visited along the same coastal stretches as in 2010 and in 2012 additional information was collected from 9 rivers in Finland. Some complementary documentation was made in Swedish rivers in 2012 and 2013. In 2010 four lamprey rivers were also visited in Latvia, and in 2011 again four rivers. One river was visited in Estonia in 2011 and two in 2012. The results from those studies are compared with the situation back in 1978 from Northern Sweden and Finland (Sjöberg 1982) when 25 rivers were visited, and from Latvia back in 1992, when 4 rivers were visited.

According to the classification of catching methods in fisheries by Gabriel *et al*. (eds.) (2005), the lamprey gear presented in this article could be subsumed under the subtitle *traps* which

> are implements in which the fish enters voluntarily but is hampered from coming out. Usually in these traps there are one or more chambers which will be closed when the prey enters or which have a retarding device such as a gorge or a funnel. (Gabriel *et al.* (eds.) 2005.)

Under this subtitle there is a group of traps called *baskets*, mostly small traps, three-dimensional, with retarding devices, namely: (a) Pots (made of wood or wire or plastic, mostly without wings and leaders); (b) Conical and drum-like traps (made of netting with hoops and frames; mostly with wings and leaders; sometimes many fyke nets are combined in a catching system); and (c) Box-like traps (made of strong, mostly iron, frames).

Slack-Smith (2001) has a similar approach, when presenting fishing with traps and pots. Here traps are described as simple passive fishing gear

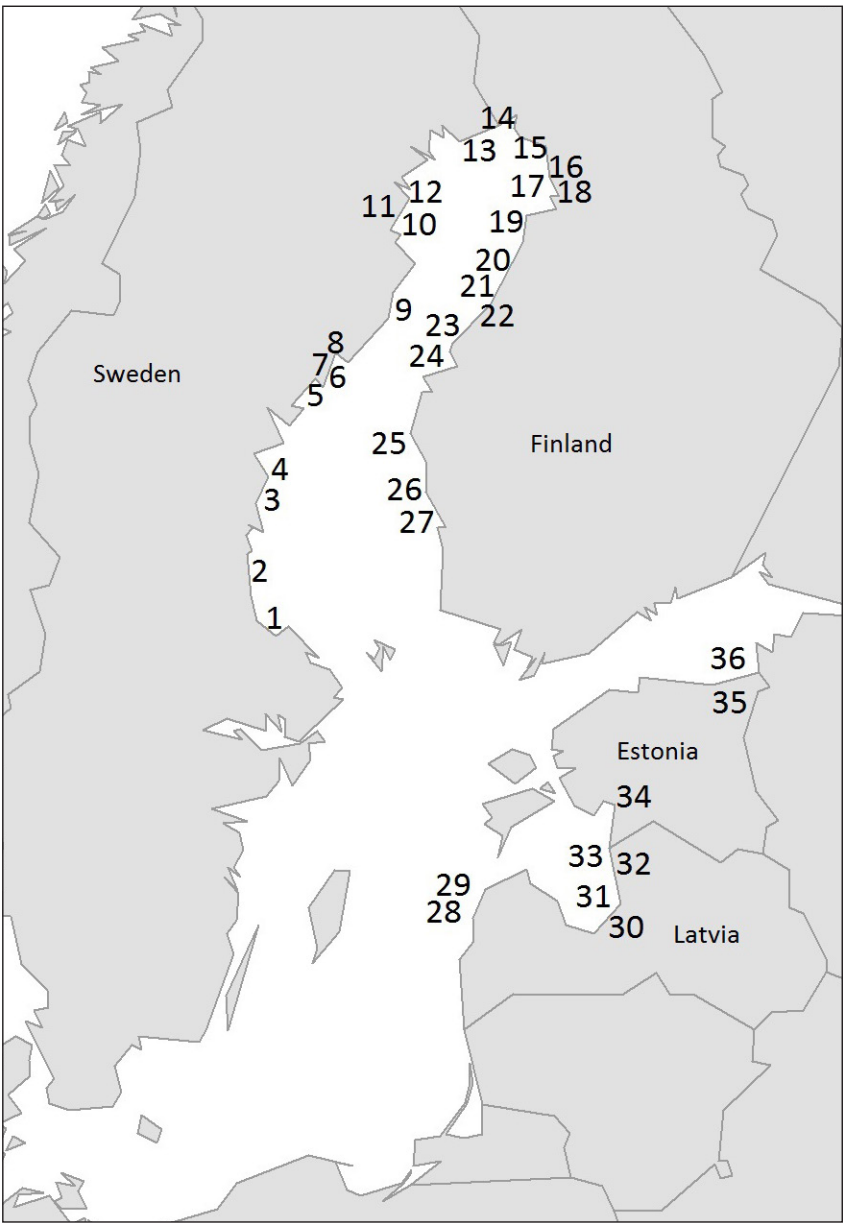

Fig. 1. The lamprey rivers visited during this study and the approximate locations where they flow into the Baltic Sea area:[1] 1. Dalälven; 2. Ljusnan; 3. Gnarpsån; 4. Ljungan; 5. Gideälven; 6. Öreälven; 7. Hörneån; 8. Umeälven; 9. Rickleån; 10. Byskeälven; 11. Åbyälven; 12. Piteälven; 13. Kalixälven; 14. Torneälven/Tornionjoki (the river separating Sweden and Finland); 15. Simojoki; 16. Kuivajoki; 17. Iijoki; 18. Kiiminkijoki; 19. Siikajoki; 20. Pyhäjoki; 21. Kalajoki; 22. Lestijoki; 23. Perhonjoki; 24. Kyrönjoki; 25. Tjöckån/Tiukanjoki; 26. Merikarvianjoki; 27. Kokemäenjoki; 28. Užava; 29. Venta; 30. Daugava; 31. Gauja; 32. Svētupe; 33. Salaca; 34. Pärnu; 35. Toolse and 36. Narva.

that allows fish to enter and then makes it hard for them to escape, for example by putting chambers in the trap or pot that can be closed once the fish enter or have a funnel that makes it difficult for the fish to escape. Furthermore, in general, traps are large structures fixed to the shore. Pots are smaller, movable traps, enclosed baskets or boxes that are set from a boat or by hand (Slack-Smith 2001).

According to the general classification presented by Gabriel *et al*. (eds.) (2005) and Slack-Smith (2001) most, if not all, lamprey gear within the study area fit into the basket types of gear described above, and particularly so those called *pots*.

However, the terminology used for the different types of fishing gear in this article is as follows below. It is not my intention to create a new typology of the gear and methods used for fishing river lamprey in the Baltic Sea area, but it is an attempt to adjust the terminology to the situation in the Baltic Sea area, related to the gear used there. In Fig. 2 the appearance of gear of different groups is illustrated with examples.

Basket: A gear of willow shoots or twigs (osier basket) or other similar flexible material (juniper, spruce, rattan) is called a *basket* (in Swedish *kasse*, *nättingkasse*). The baskets are used both with and without lifting frames. They are either separately placed at the bottom of the river or attached to a weir or obstacle (Fig. 2a).

Log: A gear made of a piece of a hollowed tree trunk is called a *log* (in Swedish *stock* or *nättingstock*). They are normally without lifting frames, and never attached to a weir or obstacle (Fig. 2b). A gear made of wooden boards, square or rectangular in form, is also called a *log* (in Swedish a *stock* or *nättingtock*). They are normally without lifting frames, and never attached to a weir (Fig. 2c).

Pot: A gear made of wooden laths, cylindrical in form, is called a *pot*[2] (in Swedish *tina* or *nättingtina*). They are either placed separately at the bottom of the river or attached to a weir or obstacle (Fig. 2d).

Fyke net: A gear made of netting with hoops and with wings (leading arms) is called a *fyke net* (in Swedish *ryssja med ledarmar*) (Fig. 2e). A fyke net without wings is still called a *fyke net* (in Swedish *ryssja utan ledarmar*) (Fig. 2i).

Net gear: A gear made of netting, equipped with a lifting frame and attached to a weir is called a *net gear* (in Swedish *nättingtina av nät*) (Fig. 2h).

Fishing-net: A gear of finely woven fishing net is called a *fishing-net* (in Swedish *fisknät med täta maskor*) (Fig. 2j).

There are also variations (e.g. Fig. 2f) and combinations of these types, for example, a basket combined with a net (Fig. 2g).

Fig. 2k illustrates cones of plastic or similar material and is separated here as a particular type of lamprey fishing method, as they are placed in a

row at the bottom of the river, where they are attached side by side along a line or pole, and because they catch lampreys during daytime, not at night as all other gear described in this study.

Because some gear types often are equipped with lifting frames and attached to weirs of different constructions in different parts of a country and in different countries, there are short descriptions of those as well. A weir, or *pata* in Swedish (from Finnish *pato*, meaning a barrier in the stream, see Storå 1978) used for lamprey fishing in the studied area is originally a wooden construction, but nowadays sometimes of iron or steel, on which the fishing gear with lifting frames are attached side by side. By means of the weirs the fishermen can place their gear further out in the river with streaming water than otherwise would have been possible, as they are constructed in Sweden and Finland, or reach across a river, such as the weirs in the Latvian River Salaca. In Latvia a weir is called *tacis*.

However, what is called a *weir*, *obstacle*, *barrier* or *pata* in connection to lamprey fishing in the studied area is usually not a barrier as such to the upstream migrating lampreys, but it is the gear placed in the weir, barrier or *pata* that prevents the lampreys from continuing and makes them try to pass by entering into the gear, where they get trapped (e.g. Fig. 25). One exception is a type of weir in Latvia where the migration is prevented by adding sections of wooden barriers in the weir (e.g. Fig. 81 in the forthcoming Part II), and the gear used and its attachment to the weir are designed according to that situation (see section regarding Estonia in Part II).

The river lamprey is called *flodnejonöga* or *nätting* in Sweden, *nahkiainen* in Finland, *upes nêgis* in Latvia and *jõesilm* in Estonia.

Outline of the Variety of River Lamprey Fishing Gear and Methods in the Baltic Sea Area

Basically all the lamprey fishing gear in the studied area is constructed in the same way: a basket, log, pot or a fyke net with small mesh is equipped with one or more funnels with a small entrance in the end which leads the lampreys into the gear (an exception is a finely woven net). The gear (except the net) is usually placed with the entrance in a downstream direction (but there are exceptions here too, see below) on or close to the bottom, either singly, or together side by side in a weir, an obstacle, constructed mainly of wood, but nowadays sometimes iron. When the lampreys migrate up the river during the night they have to find their way among stones and other obstacles in the river. When they meet a gear, they try to pass it to continue the migration. As they are fairly weak swimmers they search for an easy way around. When they come to a fishing gear where the fishermen have tried to

Fig. 2. In this figure an overview of river lamprey gear of different types from the studied rivers is presented. 2a. *A basket constructed by willow, rattan, juniper or spruce, with or without lifting frames.* Traditional lamprey baskets earlier used in the River Umeälven. The basket on the left is made of willow, the second one of rattan, and the third one of willow. 2b. *A log from a tree trunk.* This example is from the River Piteälven. 2c. *A log constructed of wooden boards.* A traditional type of fishing gear, in this case from the River Rickleån in the province of Västerbotten, Sweden, where it still is in use. 2d. *A pot made from wooden laths*. This traditional type of wooden laths used for lamprey fishing is from the River Torneälven. 2e. *Fyke nets of different sizes*. Fyke net for lamprey catching demonstrated in the Finnish River Iijoki, 1978. 2f. *Other types of gear like rebuilt milk pots, rebuilt fire extinguishers, plastic tubes, etc.* Lamprey fishing gear from the River Rickleån. Besides the traditional logs of boards, an invention of gear constructed of milk cans is shown. 2g. *A basket combined with net.* This basket is combined with a net, which is attached to a lifting frame. Photo from the River Salaca, eastern Latvia, in 1992. 2h. *Gear of nets and with lifting frames.* A lamprey gear made by nets and attached to a lifting frame from the River Salaca in Eastern Latvia in 2011. 2i. *Fyke net without wings.* Fyke nets without wings in the River Ušava in Eastern Latvia in 2010. 2j. *Ordinary fishing-nets, tightly woven;* here presented as a drawing of a fishing-net. Ordinary fishing-nets adjusted to lamprey fishing by tightly woven nets are to some extent used in Latvia.[3] 2k. *Cone-formed gear of plastic and similar materials* used for river lamprey fishing in the River Pärnu in Estonia 2011. Photos: Kjell Sjöberg (except 2j).

make the passage around the gear difficult by sealing around it with spruce twigs, mosses or similar material, the lampreys are led towards the entrance in the gear, enter it, and are trapped. In the central part of the gear, regardless of its type or material, there is a funnel with a narrow entrance with a diameter just a bit larger than the thickness of the fish, which the lampreys have to pass to be able to continue. After that they are caught, because they cannot find the narrow entrance and escape backwards from the trap. Thus it is constructed on the same principle as other fish traps, but modified for the size and shape of the lamprey, and for the conditions in the rivers where the lampreys are caught. Several hundred lampreys can be caught in a single gear during one night. However, although the same technique is used, the gear looks different in different geographic regions.

Fig. 2 shows an overview of examples of gear used nowadays (or up to recently) in the different countries. Some of them represent original types, but some are modifications of the original ones, for example by using new materials. The overview also includes gear of similar types, but where the ways of using them are so different that they justify some attention. For details, see the respective sections about fishing in the different countries, presented below.

Table 1 illustrates how the different types of gear shown in Fig. 2 are related to the studied rivers in the different countries. The table also includes some older trap types that are no longer in use, but have been until recent decades. Also, changes in material used when constructing the gear, for example from willow shoots to plastic nets or glass fibre material are indicated. Generally, a certain degree of modernization in the shape and material of the original types of fishing gear is quite common at the fishing sites, but sometimes the changes are so pronounced that they are separated in a specific section in the table. For example, in the River Rickleå, old milk cans, earlier used for transporting milk from farms (Fig 2f; Fig. 17; Fig. 18), have been modified and are now used for lamprey fishing.

The most common trap type in Estonia has also been separated into a specific section in the table (Fig. 2k). Although the construction of the gear is in principle the same as in other lamprey traps, the way in which these gear are used distinguishes them from all other lamprey fishing gear in Sweden, Finland and Latvia. However, for more details, see the description of the fishing methods from the different countries below.

Description of Gear, Lifting Frames and Weirs Used in Different Countries within the Baltic Sea Area

In the following sections a short introduction to the lamprey fishing in the different countries involved in this study is presented, followed by descriptions of the gear used.

		a → a	b	c → c	d → d	e	f	g → h	i	j	k
	Sweden										
1	Dalälven				○ ●						
2	Ljusnan[5]			○ ○	○ ●						
3	Gnarpsån			○	● ●						
4	Ljungan				○ ●						
5	Gideälven		○	○			●				
6	Öreälven	○		● ●							
7	Hörneån			●							
8	Umeälven	○ ○		○ ○							
9	Rickleån	○	○	● ●			●				
10	Byskeälven		○	○ ●							
11	Åbyälven	○		● ●			●				
12	Piteälven	○	○				●				
13	Kalixälven	○ ●			○						
14a	Torneälven	○ ●			● ●						
	Finland										
14b	Tornionjoki	○			● ●	●					
15	Simojoki	● ●									
16	Kuivajoki	● ●									
17	Iijoki	○				●					
18	Kiiminkijoki	● ●									
19	Siikajoki	● ●				●					
20	Pyhäjoki	○ ●				●					
21	Kalajoki	● ●				●					
22	Lestijoki	○ ●				●					
23	Perhonjoki	○ ●				●					
24	Kyrönjoki	○ ●									
25	Tjöckån	● ●					●				
26	Merikarvianjoki	●				●					
27	Kokemänenjoki	○				●					
	Latvia										
28	Užava								●		
29	Venta	○						●			
30	Daugava	○							●	●	
31	Gauja	○							●		
32	Svētupe							●			
33	Salaca	○						○ ●			
	Estonia										
34	Pärnu					●					●
35	Toolse										●
36	Narva	○				●					●

Table 1. In this table an overview of river lamprey fishing gear used in the lamprey rivers visited during this study is presented[4] (see Fig. 1 about the locations of the rivers). The letters along the horizontal line are equivalent to the letters in Fig. 2. An arrow indicates a change of a gear, for example a change in material from willow shoots to plastic nets (for details, see respective sections in the text). A filled circle indicates the present use of gear, an empty circle indicates earlier types of gear used in the river. (a) A basket constructed of willow, rattan, juniper or spruce, with or without lifting frames. (b) A log from a tree trunk. (c) A log of pieces of wooden boards. (d) A pot of wooden laths. (e) Fyke nets of different sizes. (f) Other types of gear like rebuilt milk cans, rebuilt fire extinguishers, plastic tubes, etc. (g) A basket combined with a net. (h) Traps of nets, normally with lifting frames. (i) Fyke net without wings. (j) Ordinary fishing-nets, tightly woven. (k) Cone-formed plastic and metallic gear.

Sweden

Fishing for river lampreys has traditionally been done for hundreds of years along the north-eastern coast of the country in most rivers entering into the Gulf of Bothnia in the northern part of the Baltic Sea, from the River Dalälven (Fig. 1:1) in the south and further north up to the Finnish borders. In the River Ljungan (Fig. 1:4) the first written notes about lamprey fishing date from 1425 (Nordberg 1977). Some of the larger rivers had important lamprey fishing before the construction of hydroelectric power dams, for example, the River Dalälven and the River Umeälven (Sjöberg 1982) (Fig. 1:1 and Fig. 1:8, mean annual discharge 379 and 431 m^3/sec., respectively, see Tockner *et al*. (eds.) 2009), but the fishing has totally or almost totally ceased with dam construction. Nevertheless, lamprey fishing is still going on in at least 14 rivers.

The north Swedish lamprey rivers could be generalized as having sections of white-water rapids or streaming water with stones and boulders on the bottom close to their mouth into the sea (see e.g. Fig. 10). It is there the lampreys are caught during their upstream spawning migration in the autumn. Approximately 50–55 people fish for lamprey (Sjöberg 2011), but none of them are regarded as professional and no fishermen are officially registered as lamprey fishermen. Many of them fish to keep the tradition alive and the catches are distributed locally or are kept in the family. However, surpluses are sold, so it is still possible to buy smoked or grilled/roasted lampreys at the market. There is no longer any statistical information available about the catches of lampreys in Sweden, but the total annual catch is estimated to about 7.5 tons, or about 150,000 lampreys (Sjöberg 2011). The fishing is normally organized within a fish conservation association.

The fishing gear used is of the traditional type, which has been used for decades or centuries, although new, more durable materials are now used to make them. A variety of gear is used or has been in use until a few decades ago, but the more efficient fyke nets, nowadays so dominant in the Finnish rivers, are not in use in Sweden. This might reflect the weak commercial market for lamprey in Sweden and thus a relatively low ambition to make the fishing more efficient.

Below there are descriptions of the different types of lamprey fishing gear used in Sweden.

A basket of shoots or twigs of willow or of rattan and their substitutes of other materials, like plastic nets

One of the passive fishing methods described by Brinkhuizen (1983) is the wickerwork fish-trap, which generally consists of a long funnel made of

twigs of wicker plaited together of willow or some other kind of wood that is similarly pliant. The fish enters into the funnel via a wide opening called the *mouth*, which is often formed by a hoop. The external wall of the trap he calls the outer casing, and the narrow hindmost part of the outer casing is called the tail. Then he distinguishes two kinds of wicker fish-traps: with throats and without throats. The throat consists of a small wicker funnel that is inserted in the big funnel. It could be built in or sticking out of the outer casing. All the wickerwork traps in the study area have a throat built-in in the outer casing.

The wickerwork fish-trap described above, hereafter called the basket type of gear (Fig. 2a), has a long tradition in northern Swedish lamprey fishing rivers, where it is described by Linnæus in 1732 from the River Kalixälven (Linnæus 2003 [1732]). It is made by shoots of willow, or by rattan. Ekman (1910) also described this type in his review of river lamprey fishing gear from Sweden. How such a type of gear (in Swedish *nättingkasse*) is constructed is shown in detail from the River Umeälven in Sweden (Ågren 1978). Two-year-old shoots of willow (*Salix spp.*) were used and they were originally put together with thin roots of spruce or pine, but later on metal wires or some other more easily available and more manageable materials are used. The length of the basket was about 80 centimetres.

The gear of the basket types could be used in two ways: They were placed separately or side by side in the same way as wooden logs (see below), held on the bottom of the river by stones placed on top, or equipped with lifting frames (Fig. 4) and then often attached to a wooden construction, a weir or trestles (in Swedish *pata*) (see below).

The traditional willow baskets are no longer in use in Sweden, but they were the dominant gear in the important River Umeälven (Fig. 3) until 1958, when a hydroelectric power plant dam was constructed at Stornorrfors, about 30 kilometeres from the mouth of the river. However, they were still in use in the River Torneälven/Tornionjoki (Fig. 1:14) (attached to lifting frames) in 1978 and in the River Rickleån in 1991 (Fig. 1:9; Fig. 4; Fig. 5). The wooden material has been succeeded by nets of plastic. Examples of such a change can be seen in the River Kalixälven (Fig. 6) and in Torneälven/Tornionjoki (Fig. 21).

Logs from tree trunks

In principle, an easy way to make a gear for catching river lampreys is to split a tree trunk into two parts, hollow the parts out and, and then put them together again, with addition of a funnel in the entrance constructed of birch bark. Besides the willow basket gear, such a log is mentioned by Linnæus from his journey to the northern part of Sweden in 1732 (Linnæus

Fig. 3. Basket gear from the River Umeälven, kept by Rickard Danielsson. The basket to the left is made of rattan: the one to the right is made of willow. 19 October 2011. Photo: Kjell Sjöberg.

Fig. 4. Willow baskets equipped with lifting frames on the Swedish side of the River Torneälven/ Tornionjoki. This gear type was seen frequently in the river in 1978, but is no longer in use there. Photos: Kjell Sjöberg.

Fig. 5. Bertil Lundberg is emptying traditional willow baskets in the River Rickleå in Northern Sweden in 1991. These basket traps are probably constructed at the River Umeälven, and are not in use any longer in the rivers Umeälven and Rickleån. The traps were placed between stones in the rapid and were held down on the bottom with stones on top of the gear. This type of fishing site is typical of many lamprey rivers in Northern Sweden. The River Rickleån, 1991. Photo: Kjell Sjöberg.

Fig. 6. Fishing gear of plastic mesh in the River Kalixälven 2010. Traditional willow baskets with lifting frames were used here until about 20 years ago. Thereafter they were replaced with plastic gear, and in the *pata* new material is sometimes also used (as shown here), where the *pata* is made mostly of iron. The River Kalixälven, 13 October 2010. Photo: Kjell Sjöberg.

2003 [1732]), and Lundberg (1898) and Ekman (1910) describe it from the River Umeälven. From the River Umeälven the word *nättingstock* is used in documents from the mid-sixteenth century.[6]

Fishing gear of this type is no longer in use, but at least up till the middle of the twentieth century it was still utilized in the Swedish rivers Gideälven, Rickleån, Byskeälven and Piteälven (Fig. 2b; Fig. 7; Fig. 8; Sjöberg 1982).

Logs of wooden boards

Today hollowed out stocks are no longer constructed or used, but the name *nättingstock* ('lamprey log') has been transferred to what seems to have been its direct successor, that is, a log made by wooden boards put together to make a gear with a length of about 70–90 centimetres, and with a funnel-shaped mouth and with a throat adjusted to the width of a lamprey (Figs. 9–14). This type of gear is probably easier to construct than the hollowed stock, and with a flat bottom it is easier to place tight to the bottom of the river. Stones are placed on top to keep it on the bottom, which also is easier if the gear has a flat top.

The traditional log of boards (Swedish *nättingstock)* was used in the River Umeälven along with the willow basket (Berg 1960; Ågren 1978) until the hydropower development in the end of the 1950s. The logs varied considerably in size. Measurements from a sample in the Museum of Västerbotten varied from about 60 to 105 centimetres in length (mean 83 cm, N= 14), and with a width and depth of 46 x 29 centimetres at the entrance of the log (N= 7, from 24 to 57 in width and from 17 to 35 in depth). All the logs in the sample had a funnel of sheet metal leading the lampreys into the log and the diameter of the hole in the end of the funnel which the lampreys

Fig. 7. Log from a tree trunk from the River Rickleån, where this type of gear was in use along with other types up till around the 1960s. The length is 71 centimetres. This one belongs to Bo Bengtsson. 20 August 2012. Photo: Kjell Sjöberg.

Fig. 8. A log made of a tree trunk, hollowed out and put together again, earlier used in the River Piteälven in Northern Sweden, where these gear were left on the shore. 18 October 2010. Photo: Kjell Sjöberg.

have to pass to get trapped in the log was about 2.5 centimetres. Logs of this type are still in use in the Swedish rivers Öreälven and Rickleå (Fig. 1:6; Fig. 1:9; Fig. 2c; Fig. 9–14), but nowadays also with the boards replaced partly or completely with plastic nets (Fig. 14), sheets of metal or, for example, with materials like plywood, as in the Swedish rivers Byske älv (Fig. 1:10) and Åbyälven (Fig. 1:11) respectively. According to Ekman (1910) the funnels of all lamprey gear at that time were constructed of the same material as the rest of the gear, or of birch bark.

Like the baskets, the logs are placed between stones in the rapids, one by one or if possible side by side in positions where the fishermen by experience know that the lampreys usually pass. In the River Umeälven, where both baskets and logs of boards were used in the same rapids, the baskets were used more frequently in the beginning of the season, while the logs were more often used in the end, when ice began to appear in the river (see also Ågren 1978). Larger logs could also be used for keeping lampreys alive for a longer time.

Modified types of lamprey gear, like rebuilt milk pots, rebuilt fire extinguishers, plastic tubes, etcetera

Certainly based on inspiration of the traditional types of lamprey fishing gear that were developed by generations of lamprey fishermen, today there are many modifications because of the availability of new materials. Already mentioned is the trap of plastic nets, as in the River Kalixälven. However, plastic or metallic sheets shaped as a cone, or rebuilt fire extinguishers, etcetera can also be found (Fig. 15). When lampreys are caught near power

Fig. 9. Eric Andersson and Greger Roos are emptying their lamprey logs (Swedish *nättingstockar*) in the River Rickleån in 2013. When possible the logs are placed parallel to the edge of the river and they are weighted down to the bottom with stones. 13 September 2013. Photo: Kjell Sjöberg.

Fig.10. The picture shows a typical habitat for lamprey fishing in a northern Swedish river. Reconstructed milk cans and gear of wooden logs of different sizes and shapes is used for catching the lampreys. The gear is emptied early in the morning by Eric Andersson and Greger Roos. The River Rickleån, 13 September 2013. Photo: Kjell Sjöberg.

Fig. 11a. A wooden log (Swedish *nättingstock)* from the River Öreälven. In the narrower end of the log where the lampreys are emptied out, there is a sliding stopper locked with a latch (see also Fig. 12) and with a piece of chain as handgrip. 26 September 2012. Photo: Kjell Sjöberg.

Fig. 11b. Sliding stopper and its locking wedge (Swedish *stängningslucka med lås*) on a wooden log from the River Umeälven owned by Rickard Danielsson at Klabböle. There is a groove in the sliding stopper where the pin acting as a locking wedge is slid into position. In that way it prevents the stopper from moving in either direction. 18 March 2013. Photo: Kjell Sjöberg.

Fig. 11c. Another wooden log from the River Umeälven kept at the Museum of the Province of Västerbotten (Västerbottens museum), with a similar type of sliding stopper but with another arrangement of the wedge to keep it in a closed position. 15 January 2013. Photo: Kjell Sjöberg.

Fig. 12. Bo Sundqvist is emptying the lampreys from a wooden log (Swedish *nättingstock)* into a sack of jute. The River Öreälven, 26 September 2012. Photo: Kjell Sjöberg

Fig. 13. Lamprey logs (Swedish *nättingstockar*) from the River Rickleån. Here the opening where the lampreys are emptied is sealed with a sliding cover, which is locked by a wooden wedge. The initials of the fishermen are carved in the wood to indicate the owner. The length is about 75 centimetres. 30 August 2011. Photo: Kjell Sjöberg.

Fig. 14. A traditional river lamprey fishing gear, a log constructed of wooden boards, can be seen in the background, while in the front the fishing gear is constructed of a plastic net wrapped around a framework of iron (expanded with a frame as a handle)—clearly the same principle as in the old log. The River Öreälven, Sweden, 2010. The wooden logs in the river are between 70–80 centrimetres long. 22 September 2010. Photo: Kjell Sjöberg.

Fig. 15. The present day lamprey gear in the River Piteälven, made of old fire extinguishers among other things. They are placed one by one in the rapid with the entrance in downstream direction as the traditional gear. 18 October 2010. Photo: Kjell Sjöberg.

Fig. 16. A metallic box used for lamprey catching at the hydroelectric power plant dam in the River Ljusnan, in Sweden. Most of the lampreys are transported and released upstream of the dam. 14 October 2011. Photo: Kjell Sjöberg.

Fig. 17. Lamprey gear from the River Rickleån, province of Västerbotten, Sweden. Logs of wooden boards, where two sides have been replaced by perforated metal. Milk cans remodelled to serve as lamprey traps by creating a funnel in the bottom and with holes on the side to improve the passage of water. The one without a funnel in the bottom is used for storing lampreys. 15 June 1980. Photo: Kjell Sjöberg.

Fig. 18. In 2010 Eric Andersson used the same type of modified lamprey gear in the River Rickleå as shown in Fig. 17, that is, a metallic pot made by a can formerly used for the transportation of milk from farms. 18 November 2010. Photo: Kjell Sjöberg.

Fig. 19. Pots of wooden laths (together with willow baskets) in the River Torneälven/Tornionjoki, 1978. Photo: Kjell Sjöberg.

Fig. 20. An overview of pots of wooden laths. 20a. From the River Torneälven/Tornionjoki. Fig 20b & Fig. 20c. In the River Ljungan the traditional gear of wooden laths is nowadays supplemented by a trap type of stainless steel. 20d. From the River Gnapsån. 20e. From the River Ljusnan. 20f. From the River Dalälven, demontrated by Bjarne Ragnarsson and Hans Andersson.
Photo: Kjell Sjöberg.

Fig. 21. Besides using the traditional gear of wooden laths, the lamprey fishermen test other materials, like plastic mesh, when constructing the gear. The Swedish side of the River Torneälven/Tornionjoki. 26 September 2011. Photo: Kjell Sjöberg.

Fig. 22. A gear of traditional type, but constructed of glass fibre, has begun to replace the traps made of wooden laths in the River Torneälven/Tornionjoki. 13 October 2010. Photo: Kjell Sjöberg.

Fig. 23. Lamprey fishing gear of plastic mesh on weirs at the River Kalixälven (Fig. 1:13). 13 October 2010. Photo: Kjell Sjöberg.

Fig. 24. Lamprey traps attached to two types of weirs, with one and two parallel rows of trestles (Swedish *enryggig* and *tvåryggig strandpata)* in the Rapid Kukkolaforsen on the Swedish side of the River Torneälven/Tornionjoki. 13 October 2010. Photo: Kjell Sjöberg.

Fig. 25. The traditional pots of wooden laths are still frequently used in the River Torneälven/Tornionjoki (here the Swedish side, at the Rapid Kukkolaforsen). At low water it is clearly demonstrated how the pots are attached to a weir, side by side, and how the pots are held in position and pressed to the bottom by a rope from the top of the lifting frame which is attached to the weir. Behind the row of wooden laths, a single trap made of glass fibre is seen. 13 October 2010. Photo: Kjell Sjöberg.

Fig. 26. Kurt Niska is emptying his lamprey traps attached to weirs with one row of trestles (Swedish *enryggig pata*) in the lower part of the Rapid Kukkolaforsen in the River Torneälven/Tornionjoki (Swedish side). 13 October 2010. Photo: Kjell Sjöberg.

Fig. 27. Smaller *patas* (or a *strandpata* in Swedish, meaning *pata* at the shoreline) are built out from the edge of the river, which makes it possible for the fishermen to reach further out into the river with their gear, as demonstrated here by Helge Blomlid on the Swedish side of the River Torneälven/Tornionjoki. 26 September 2011. Photo: Kjell Sjöberg.

plant dams, the traps are adjusted to the local situation, as for example in the River Ljusnan in Sweden, where lampreys are caught with large boxes of metal mesh (Fig. 16) at the side of the dam with the aim of transporting the lampreys around the dam and releasing them upstream of the obstacle. In the River Rickleån in Sweden old milk cans, earlier used for transportation of milk from farms to dairies, are rebuilt with a funnel-shaped entrance from the bottom and by drilling holes in the metal to allow water to flow through (Fig. 17; Fig. 18). The lampreys are then emptied from the can through the ordinary opening on the other end of the gear.

Pots of wooden laths of spruce or pine

There also occurs a type of lamprey gear constructed by wooden laths made of Norway spruce or Scots pine, which still are frequently used in the River Torneälven/Tornionjoki (Fig. 2d; Fig. 19; Fig. 20a).

The same type of lamprey pot has previously been used in the River Kalixälven (Fig. 1:13) and in the River Dalälven (Fig. 1:1), and still (or up to recently) also in the rivers Ljusnan, Gnarpsån and Ljungan (Fig. 1:2; 1:3; 1:4; Fig. 20) (without lifting frames), but they are not noted from the rivers in between in this study (Table 1). In the River Torneälven/Tornionjoki the material of the gear is sometimes replaced with plastic or metallic mesh (Fig. 21), or is totally reconstructed with glass fibre material (Fig. 22). The gear found in the River Torneälven/Tornionjoki is equipped with lifting frames and is attached to barriers that are constructed along the shores of the river. In contrast, the traps previously used in for example the River Dalälven were placed without lifting-frames either singly or were placed in parallel to each other. However, before the regulation of the water due to a power plant dam constructed in 1911–1917, barriers were constructed there, and lifting frames were attached to the fishing gear according to Ehn (1970; Ehn 1986). He also describes that the pots could be kept in place by poles.

In the rivers Dalälven and Ljusnan, lamprey fishing is nowadays only performed at hydroelectric dams, and the gear is made by metallic nets or sheets (Fig. 16), and in the River Ljungan metallic traps are used in parallel to the traditional type (Fig. 20c).

The use of weirs and lifting frames

Ekman (1910) noted that lamprey gear of wood could be placed in the Swedish rivers in three ways.

(1) In the northernmost rivers, such as the River Torneälven/Tornionjoki and the River Kalixälven the gear is equipped with lifting frames and is attached to *strandpator* ('shore weirs') of the same type as are used for whitefish fishing (*Coregonus lavaretus*), which are simpler than those

used for salmon (*Salmo salar*) fishing. He calls them *enryggiga* ('with one backbone'). They were constructed as a row of trestles (*bockar* in Swedish) straight out from the shore (cf. Storå 1978 and Storå 2008). The trestles were tied together with logs or boards placed on them. Stones were placed on the *pata* to make them better withstand the streaming water. So-called *tvåryggiga strandpator* ('with two backbones') had two parallel rows of trestles connected with poles and boards (e.g. Figs. 23–27). The situation today is very much the same as Ekman described in 1910. *Strandpator* are still in use in the northernmost Swedish rivers, and the lamprey fishing gear is attached to them with lifting frames.

(2) In the rivers further south weirs of the *strandpata* type are not used and the fishing gear is not equipped with lifting frames. Instead the trap types still in use there (or in use until a few decades ago), that is, the basket type of willow or rattan and the pot of wooden laths, were distributed one by one among stones on the bottom of the rivers, with stones on top to press them down to the bottom.

(3) The third type, the log with broad wooden boards, has never been equipped with lifting frames, and has never been attached to weirs. However, it often has a handgrip of some kind to make it easier to lift it up from the water (Fig. 11a), and particularly logs of this type but constructed of plastic nets or similar materials are often equipped in this way (e.g. Fig. 14). As mentioned, in older times there was also a kind of weirs in the River Dalälven (Ehn 1970).

NOTES

[1] In the Swedish river names, *älv* means 'river,' in the Finnish river names it is *joki*. When a Swedish river is called an "å," as in *Gnarpsån*, *Hörneån* and *Rickleån*, it means a medium-sized water course, smaller than a river (www.smhi.se/kunskapsbanken/hydrologiska-begrepp-1.29125; access date 3 September 2013).

[2] The terminology about some fishing gear could be a bit confusing. Ekman (1910) used the words *tinor* and *mjärdar* in Swedish for the lamprey gear, but he stressed that there is no big difference between those two terms and there is also a difference between Southern and Northern Sweden. In the northern part *tinor* is sometimes used for the same type of gear that is called *mjärde* in the southern part. So he called a gear equipped with a lifting frame at the entrance a *tina*, and a gear without a lifting frame he called a *mjärde*. Then, for example, the willow basket equipped with a lifting frame should be called a *tina*, and a willow basket without a lifting frame should be called a *mjärde*. Olofsson (1922) also stresses the different uses of the words *mjärde* and *tina*, but regards those used in running water as *tinor*, other ones as *mjärdar* and adds that normally the gear used in running water to catch fish migrating against the water flow is called *tinor*. In Swedish-speaking parts of Finland the word *mjärde* is sometimes used for *tina*. However, in this article I am inclined to accept Olofsson's (1922) opinion, and have adjusted

the terminology to the local traditions of lamprey fishermen at the Swedish rivers where a gear type without lifting frame is called *nättingkasse* if constructed of willow or rattan material. The gear type constructed of wooden boards is called *nättingstock* and the gear of wooden laths is called *nättingtina*. Those with lifting frames are called *tinor* even if constructed either of willow, plastic or metallic mesh or wooden laths (see also Storå 1978 and Storå 2008 for further information).

[3] According to fishermen in Latvia, tightly woven fishing-nets could be used for catching river lampreys. This drawing is a free interpretation of such a gear illustrated by Gun Lövdahl.

[4] The overview of lamprey fishing gear in this table is mainly based on what fishermen presented to me when I visited their fishing sites in 1978 onwards. During the period up till present days some gear types have ceased to be used, but are nevertheless included here. To some extent older types of gear are also noted from different rivers based on personal communication from fishermen, museums, and from the literature, but they are not consistently covered for all rivers, particularly not from the rivers in Latvia and Estonia.

[5.] Ehn (1986) writes in his description of lamprey gear in the River Ljusnan, where besides pots of spruce laths also squared pots of wood with a squared lifting frame were used, and also squared pots of metal sheet.

[6] Riksarkivet: Norrlands handlingar no. 13, 1559. Stockholm.

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Reviews/Comptes rendus/Besprechungen
REVIEW ESSAY

Recovering the Heritage of Past Research and Natural Resource Exploitation in Polar and Alpine Regions

Lars Andersson (ed.), *Sarek, Arktis och akademisk vardag. En bok om geografen Axel Hamberg* ['Sarek, the High Arctic and academic everday life. A book about the geographer Axel Hamberg'] (Skrifter rörande Uppsala Universitet, Serie C, Organisation och Historia 94), Uppsala: Acta Universitatis Upsaliensis 2012, ISBN 9789155482541, 366 pp.; Susan Barr, David Newman & Greg Nesteroff, *Ernest Mansfield (1862–1924). "Gold—or I'm a Dutchman!"*, Trondheim: Akademika Publishing 2012, ISBN 9788232100200, 192 pp.

The study of the remnants of material cultures in northern regions is an important branch of knowledge concerning our past. It constitutes a key area in what is more generally called *Heritage Studies* that emerges from diverse disciplinary fields, in particular public history, memory studies, museology, cultural heritage, tourism studies, architecture and planning, conservation, as well as cultural geography, sociology, cultural studies and policy, anthropology, archaeology and ethnomusicology, artistic research and artistic practices. In different ways both books under review here belong to this genre. The first one deals with the role of a leading Swedish geoscientist who from 1895 onwards explored and mapped what was to become a major national park, Sarek in Northern Sweden. Apart from the history of various disciplines involved in the construction of Sarek as a unique geographical space and land of science and tourism, the text is richly illustrated with images of scientific instruments now found in museums and photographs of early research stations some of which still exist in alpine and mountainous terrain.

The second book concerns an enigmatic figure that was active at about the same time, engaged in surveying and mining in several parts of the world. Material traces of his activities, abandoned mines, half-attempted mine workings and marble quarries, huts and miners' living quarters, machinery typical of the early twentieth century, rusty tools but also documents in archives, poetry and newspaper articles tell a tale of a legendary and charismatic personality who managed to raise lots of money to support risky ventures that seldom paid off. Material traces abound in Svalbard where his legacy is fairly well known. Nowadays some

of the artefacts from a dramatic past are popular attractions on polar tourist circuits.

The Uppsala volume is a comprehensive study about the life and work of Axel Hamberg (1863–1933) who roamed and did research in Sarek, a mountain region in Northern Sweden. Sarek is now a well-known national park in Jokkmokk Municipality in the province of Lapland. The area boasts several peaks over 2,000 meters high, more than one hundred small glaciers and a variety of landscapes ranging from narrow valleys and streams with rapids to sub-alpine level fields dotted with low birch forests and other deciduous trees, to alpine shrubs, high plateaux and lofty prominences of barren rock. Today there exists a popular trail with many wayside wooden huts to spend the night. The trail is frequented by tourists who wander across vast expanses of beauty in a now not-so-silent world far away from city life. Off the beaten path one finds adventure tourists who prefer more challenging terrain in quest of extreme experiences.

Before 1895 the area had been visited only by a handful of people outside the Sami community. This situation changed significantly after the geographer Axel Hamberg in that year received a grant from the Swedish Tourist Association (*Svenska Turistföreningen*, STF, founded in 1885) that afforded him an opportunity to do research and begin mapping Sarek. As a newly appointed professor (1907) of geography at Uppsala University he was endowed with resources for systematic research and had a platform from which he could lobby and enrol others in an effort that ultimately led to a parliamentary bill in 1909—Sarek was set aside as a national park, one of the first of its kind. For Hamberg himself it was part of a lifelong project of making Sarek known not only to a limited circle of academic colleagues, mountain climbers, hikers and adventure seekers, but his efforts also imprinted its existence on the popular mind. In particular his little guidebook of 1920, *Vägledning för färder i Sarekfjällen* ['A guide for travels in the Sarek Montains'] came for a long time to serve as a bible for interested hikers and tourists.

Therewith and through his popular lectures and articles (including several in STF Yearbooks) as well as scientific measurements, more than a quarter of a century of field work, mapping and analysis culminating in scientific publications relating to Sarek, the name Axel Hamberg became intimately associated with this unique part of Sweden's northland. Altogether in his lifetime he made thirty-five summer journeys and six winter visits to Sarek. Indeed, as the author of one of the chapters in the anthology under review here reports in an anecdote, Hamberg himself identified with Sarek so strongly that when a younger geologist, Hans W:son Ahlmann, wished to do field work there, he was told to stay clear and focus instead on Abisko further north. As an old style professor Hamberg felt entitled to the Sarek range as his personal scientific empire or fife. Ahlmann was by the way later to become one of the great Swedish names in geography to modernize glaciology (relevant here is Ahlmann 1952, describing his own pioneering work on Storglaciären in the Kebnekajse area and the contruction in 1950 of Tarfala research station—affiliated with Stockholm University).

There is no doubt that Hamberg ranks as a pioneering and innovative researcher in the annals of studies of the high north including the Arctic. Before Sarek grabbed a hold of him he had already participated in a couple of Arctic expeditions. One was to Greenland in 1883 under the legendary Adolf Erik Nor-

denskiöld, who was famous for transiting the North East Passage with the *Vega* 1878–1880. The second voyage Hamberg undertook on his own in 1892 when he hired a place on board a small Norwegian catcher, the *Gjøa* that ten years later served as Roald Amundsen's vessel during the latter's successful feat as the first to sail the entire Northwest Passage (cf. Elzinga 2012: 90–93). It was on these two expeditions Hamberg, originally trained as a mineralogist, developed skills in oceanographic investigations and cartography as well as whetting an appetite for glaciology. Additionally he learned how to improvise and improve a number of instruments, among them a camera for topographic work. His photogrammetric skills proved valuable in the course of a third Arctic expedition, this time in 1898 to Spitsbergen under the famous Swedish polar explorer, geologist and paleobotanist Alfred Gabriel Nathorst.

After that Hamberg was keen to get back to Sarek where he had already made an inventory of glaciers and now proceeded systematically to map the terrain geologically, hydrographically and also branched into meteorology and earth magnetic studies. A series of field observatories was constructed, one at Pårtetjåkko located at an elevation of 1,830 metres. This station was very active during the years 1914–1918, temporarily punctuated by the tragic death of a young assistant who was pinned down in a snowstorm as he went to look for a weekly courier that was supposed to bring up new supplies from Jokkmokk (Hamberg 1918).[1] The event led to improvement of logistical methods and greater attention to security in isolated alpine observation posts.

In the course of his work in Sarek, apart from logistics, Hamberg also improved several field observation techniques and patented a design of a prefabricated wooden structure to house field observers comfortably up in the mountains, the so-called *Hamberg hut*. The procedure was to have all beams, planks and other materials cut to size and numbered in a woodworking factory and parcelled into suitably sized packs for transport to the distant mountain site where all parts were assembled into a cabin complete with insulation in the walls and galvanized sheet metal on the roof to withstand storms. During the Second International Polar Year 1932–1933 when one of the Swedish contributions was a meteorological observatory, it came in the form of a "Hamberg hut" set up on Nordenskiöldfjället above Longyearbyen on Svalbard. The structure still exists there, now called the *Swedish hut* and is used by eco-tourists. Another research cabin, originally one of five "Hamberg huts" set up in Sarek, has been moved to the Ájtte Museum in Jokkmokk where it is on display with several other artefacts from the pioneering period.

Many articles have been written about Axel Hamberg, but the anthology under review here is the first volume to provide a comprehensive account of the man's life and work. The book contains eight chapters written by specialists, each of whom covers a specific domain in Hamberg's broad range of activities as university professor, field researcher, analyst and developer of instruments and logistics. The chapters nicely complement each other. Each chapter is amply illustrated with images based on original photographs depicting the everyday life of research, instruments used and work in the field in Sarek as well as Sami assistants helping transport equipment, mountain scenes and sketches. In addition there are four chapters (two in the beginning and two at the end) that help contextualize the account; a final section lists archival materials and where they

may be found. Further there is a list of Sarek place-names, a map of Sarek based on Hamberg's map of place-names from 1922, as well as his geological map of the area from 1901. A series of coloured photographs depict the interior and exteriors of a couple of the three research cabins (or *huts* as he called them) that still exist. They are not open to tourists but may be used for courses given by the Swedish Alpine Club when these have a connection to the life and work of Hamberg.

In the book the introductory chapter provides an initial overview of the man's achievements. It was originally written by Gunnar Hoppe as a commemorative talk held before a special session of the Royal Swedish Academy of Sciences in 1980. Some contextualization continues in a chapter by the historian of science Urban Wråkberg who situates Hamberg's polar expeditions and work in the Swedish high north in a broader scientific and social perspective. Then there follow the specialist chapters devoted to particular aspects of Axel Hamberg's work: mineralogy (Hans Annersten and Erik Jonsson), glaciology (Per Holmlund), meteorology in Sarek (Håkan Hultberg), construction of the "Hamberg huts," depicting sites and interiors complete with the pipe-smoking research assistant (Kennet Axelsson), Hamberg's contributions to geological knowledge of Sarek (Olaf Svenningsen), and his role as a pioneering developer of photogrammetry as an aid in making cartographic overviews (Kennert Torlegård). Several of these chapters nicely illustrate the latter part of the book's title, namely "Academic Everyday Life."

Professor emeritus (natural geography) John O. Norrman is responsible for two further specialist chapters: one deals with the character and role of logistics in Hamberg's Sarek-research; the other concerns his teaching practices and outlines the curricula of his courses at Uppsala University in the early 1900s. All this is rounded off by his grandson Erik Hamberg's account of the history of the Hamberg family, and finally a chapter again by Norrman, who poses and responds to the provocative question, "was Axel Hamberg the last of the empire builders?"

The book project was supported by the Department of Geosciences at Uppsala University and enjoyed the university's support. It contains many illustrations with images of mountains, alpine terrain, research cabins and their (pipe-smoking) occupants, instruments and equipment used. Some of the images help instil in the reader a sense of intimacy. The chapter on logistics as well as pictures in a couple of other chapters reveal the important role a number of persons in the local Sami community had—both with their reindeer and also on their own backs and sometimes by rowboats—in helping transport the building materials for "Hamberg cabins" as well as scientific equipment to various sites. In case of the highest post, the Partejåkko observatory, it entailed a long distance over rough and sometimes steeply sloping terrain to move (initially) well over 2,000 kilos; to this may be added the stores of scientific gear that had to be brought into the field.

Trusted members of the Sami population also worked to help build and repair the facilities essential for science, and they served as couriers to bring in weekly provisions from Kvikkjokk, sometimes making snow level measurements at various points along the way to the station near the top of Pårtetjåkko.

There are two aspects in the story of Hamberg and Sarek that deserve greater attention than they receive in the volume here under review. One has to do with

a shortcoming in modernism, its lack of reflexivity and the dominance of a scientistic gaze associated with an older ideal of science. The other has to do with the book's lack of a somewhat broader contextualization.

The first issue has recently been raised by ethnologists that write on the history of Sami culture. They have noted that Hamberg in his scientific reports did not accord proper credit to the support rendered by members of the local population that contributed to the infrastructure and logistics needed in the everyday life of the scientific observers. In the scientific publications, it is argued, the traces of Sami involvement are made invisible.

One of the champions of the Uppsala University book project, Professor emeritus Norrman, takes a defensive position regarding such a viewpoint as has become more common in a post-colonial age and is now routinely accepted for example in Canada when researchers in Nunavut benefit from cooperative efforts of local communities. In his discussion of the role of logistics and rudimentary measurements that precede data analysis, interpretation and dissemination of results in journals, Norrman has a rejoinder that seems to miss the underlying point. He distinguishes between routine observation that in distant places may be delegated to amateurs and what is called the scientific achievement that consists in reducing the data, interpreting results and linking them to other data. Here he has a good point with which I agree. He notes that even when a large number of meteorological observers are involved in obtaining some of the data that go into the construction of weather reports or research it is not customary to include their names, and even less to consider them scientific participants. This too makes sense, but the point raised by ethnologists concerns a broader ethos of scientific investigation that goes beyond the paternalistic confines of an earlier tradition.

As Gísli Pálsson argues in the book, *Writing on Ice. The Ethnographic notebooks of Vilhjalmur Stefansson* (2001), such a revised assessment of past events also lies behind recent debates regarding the work of the famous Islandic-Canadian anthropologist and explorer Vilhjálmur Stefánsson (1879–1962). Stefánsson went on lengthy expeditions into the Alaskan and Canadian Arctic and wrote extensively on his encounters with indigenous groups, but in publications and his diaries he remained silent about important dimensions in his fieldwork, in particular the tacit practical knowledge of his Inuit companions and the character of his relations with them both as informants and helpers. Stefánsson and Hamberg were a product of their times. Conceptually they were firmly rooted in the ideal of anchoring the authority of their discourse single-mindedly under the banner of science and progress. What ethnologists are doing today—in retrospect—is to contextualize this ideal historically by drawing attention to skewed ethnicity, gender and the power relations that were inherent (and unquestioned) in late nineteenth and early twentieth century explorations. It seems that even today the boundary and distance between what is now sometimes called "crowd sourcing" and scientific expertise continue on the part of researchers to be carefully managed.

The second issue has to do with the broader context of Northern Sweden as a promised land where Nature romanticism developed in tandem with exploitation of natural resources like minerals, forests and rivers. It is a less controversial theme and has been taken up by several intellectual historians. An example is

Sverker Sörlin, who has written about the pioneering spirit of the north and how, for example, towards the end of the 1800s new modes of transport and mining made it possible to exploit iron ore and put Kiruna on the map as a new city of the future. He has argued how

> the North for a period, roughly 1880 to 1910, played a significant role in Sweden's national self-image and, perhaps even more particularly, in the Swedish landscape. Part of the reason was economic, but part of the reason was also scientific. (Sörlin 2004: 109.)[2]

There were several dimensions in the modernization trend that is both reflected in Hamberg's science and gave birth to Sarek. It is the economic dimension that figures prominently in the other book under review here.

Ernest Mansfield (1862–1924). "Gold—or I'm a Dutchman!" is a biography about Ernest Mansfield who was born in London, England, and as a sixteen-year-old migrated to New Zealand where he lived in the town of Wanganui from 1878 to 1897.[3] During that time he was a journalist for the a local newspaper and gave banjo lessons before becoming a broker for mining operations, first in Australia, then in the Klondike in North America, and the west Kootenay region in Canada's British Columbia just north of the American border (the 49th parallel).

Little is known about these early adventures of the man who most of his life promoted himself and his mining claims. The biography covers his life and fortunes right up to the time of his death in 1924. On the basis of extracts from books, newspapers and magazine articles, together with special maps and many never-before-published photographs, the authors piece together the fascinating story of Mansfield's various activities during the period of his life that has hitherto been mostly shrouded in mystery. This was the period before he went to Spitsbergen in 1905 in the hope of striking it rich there, and despite a series of failures and losses of vast amounts of capital he came to figure as one of the pioneers of the "Klondike period" in Svalbard.

The three authors of the book have done a superb job as detectives, not only in describing Svalbard's "Klondike days" and showing what artefacts have survived there, but they have also succeeded in shedding light on a host of the man's earlier—now forgotten—activities. The reader is given a fascinating glimpse of similar boom or bust days of gold and silver mining in British Columbia, Western Canada. A common denominator in the cases of the Canadian Kootenay district on the one hand and Spitsbergen on the other was the dynamics of unbridled capitalism and brash speculators that encouraged tearing up out-of-the-way natural landscapes in a quest for quick profits. This contrasts sharply with the case taken up in the first book, and therefore the comparison is interesting. Sarek was a natural landscape that by a parliamentary decision was set aside as a nature reserve destined for public enjoyment and science. It represented an early form of a regulated natural wilderness management regime that was only introduced much later in Norway's Svalbard and the Selkirk mountains of Canada's Kootenay region, both of which now also are popular sites for wilderness and heritage tourism.

The name Mansfield evokes anecdotes and narratives about prospecting and mining. The same year, 1905, that the American company "The Arctic Coal Co."

started mining in Longyearbyen, he set up a broad prospecting company, the Spitzbergen Mining and Exploration Syndicate; this was followed in 1910 by the Northern Exploration Company (NEC) Ltd, registered in London, England, to raise capital by selling shares, accumulating claims and managing them. These activities involved financial speculation, and construction of a series of camps and claim huts. Along the west coast of Spitsbergen there are today still cabins in various states of repair that were constructed by or for Mansfield and the NEC. Svalbard hunters and trappers were hired by Mansfield to winter on these properties to guard the claims since they existed on political no-man's land and a common occurrence was looting and claim markers being pulled down or moved. All this led to a head-on conflict with the Norwegian arch-nationalist Adolf Hoel, whose main mission in life was to fight for what he maintained were natural Norwegian rights to the arctic areas from eastern Greenland to Franz Josef Land—"the Norwegian back garden." Recent Norwegian scholars have come to call it *ishavsimperialisme* ['Arctic Ocean imperialism'].

Hoel was the driving spirit behind the foundation of what became today's Norwegian Polar Institute and he was one of the main actors who gained sovereignty over Svalbard for Norway in 1920 under the auspices of the Treaty of Spitsbergen (ratified 1925). It is thanks to Hoel's attacks on Mansfield together with later accounts by historians as well as the large number of material traces of his Svalbard days that Mansfield became a well-known personality who is still inscribed in the territory's economic and cultural history.

Regarding this period the biography does much to review the record and sift out fact from fiction to try and put into perspective and come to grips with this restless figure, journalist, adventurer, prospector, and author all wrapped in one, who for over 30 years, circled the globe seeking fortunes from mining expeditions in the search for gold and other precious resources.

The authors have worked as a team, each one concentrating on those aspects that belong to their particular area of expertise. The interwoven result is a seamless joint text. Susan Barr is a special adviser in polar matters with the Norwegian Directorate of Cultural Heritage, Oslo, and president of the International Polar Heritage Committee (IPHC). She has spent many years mapping heritage sites on Svalbard and is responsible for much of the book's chapter about the Svalbard days.

David Newman, who has lived in Goldhanger, England for forty years, is a historian and retired professional engineer. Goldhanger is a town in Essex where Mansfield lived for a while after his time in Canada and it was there the turning point in his life came that led him to Svalbard (see note 3). Thus Newman is eminently qualified to report on this crucial episode, how the Svalbard connection started and specifics concerning early investors and engineering activities.

Greg Nesteroff is a journalist and reporter employed by the *Nelson Star*, the local newspaper in Nelson, British Columbia, where he covers daily events in a style that has gained him many readers. He has also written on the history of the Doukhobour community, religiously motivated pacifists who were persecuted in Tsarist Russia and immigrated to Canada thanks to intervention by Leo Tolstoy, some of them ultimately settling in places near Nelson where one can still eat borscht and hear Russian spoken. As a dedicated local historian, when he learned of Mansfield's forgotten connection to Nelson and several other pioneer towns

like Kaslo, Slocan City and New Denver in the west Kootenay region,[4] Nesteroff began perusing old newspapers and turned up names of mining encampments (like Camp Mansfield) that have been erased from newer maps.

He also learned that Mansfield had a habit of staking mining claims and then selling shares to raise cash from wealthy investors left and right for his dizzy schemes. Further it turns out that the man not only used to live in Nelson's opulent Hume hotel (still the best hotel in town) but even spent some time across the street in the town jail during an acute crisis in his not so successful mining operations in the neighbouring mountain range due north.

In the book's final chapter, several questions are raised regarding Mansfield's personality, among others "Was he a dreamer or a swindler?" It appears that in his own time he was admired and respected by his workers and associates, and he was well received in the upper echelons of the society he depended on for financial backing. He made money through what we now call "insider trading" but at the time it was considered a legitimate business practice. Today he might have been regarded as a swindler but by the yardstick of his day he was not, he had what we today call a "vision" and acted on it with flair.

For anyone interested in the history of Svalbard and the historical significance there of the boom or bust days, this amply illustrated book is a must. The history of the Northern Exploration Company (NEC) and Mansfield's diverse activities in Svalbard is supplemented with a chapter that contains an inventory Susan Barr has made of 31 NEC named camps spread over 33 sites, mainly along the west coast of Spitsbergen. Altogether the approximate locations of 57 NEC-owned buildings have been identified, and around 27 of these are still standing. Today a number of these huts can still be used provided one has the permission of the Governor of Svalbard. Barr reckons that the NEC was in one way or another responsible for setting up about one quarter of the total number of 230 historic huts in the archipelago. The chapter covers 31 of the NEC-associated huts, briefly explaining their origins and names and how the facilities were used. This inventory is illustrated with many pictures, most of them taken in recent times to show what the buildings look like today. Several small maps (produced by David Newman) give us an idea of the locations.

Finally, mention must be made of the chapter that deals with Mansfield's literary and musical endeavours. It appears that part of the man's success in mobilizing support for various projects and his self-promoted legacy was due to a canny ability to cultivate the media. He projected an image of himself through many stories and articles he got published and saw to it that others also reported his actions and adventures, thereby ensuring his own visibility. While living all alone in a hut in Spitsbergen during the winter of 1908–1909 he even wrote a book, *Astria. The Ice Maiden.* It appeared as a paperback the following year in London. It is a semi-autobiographical science fiction based novel. The fictive setting is a rough cabin by Advent Bay that runs into Adventdalen near Longyearbyen.[5]

Taken together the books reviewed here provide two complementary perspectives on a rapidly changing era in the past viewed through the life and work of two dynamic actors whose characters differed vastly from each other, one a prominent Swedish scientist, the other an international adventurer, speculator and publicity seeker. In their different ways they both left their imprint on northern landscapes.

NOTES

[1] The research assistant in question was Manne Hofling.

[2] In this same chapter Sörlin (2004: 96) also notes how Hamberg was not very sympathetic in his view of the Sami: "he used them as carriers but questioned their reliability. He had no trust in local knowledge."

[3] The expression in the subtitle of the book, "It's gold or I'm a Dutchman," was uttered by Mansfield in Goldhanger, England, after inspecting some specimens of rocks an acquaintance and fellow Freemason had brought back from Spitsbergen in 1904. The phrase "or I'm a Dutchman" when it follows a statement of what the speaker believes to be true is a very strong form of emphasis. It stems from a derogatory mode of speech back from the time of the seventeenth century naval wars between Britain and the Netherlands when Englishmen denounced all things Dutch to be false and hateful and "Dutchmen" as the most deceitful persons one could find.

[4] Here one finds the Kokanee range which is part of the Selkirk mountain range that spans the northern portion of the Idaho Panhandle, eastern Washington state, and into south-eastern British Columbia. Its characteristic area in Canada comprises jagged peaks, encloses the Kokanee Glacier Provincial Park, and is surrounded by the spectacular linear bodies of water such as Kootenay Lake, Arrow Lakes, Slocan Lake and Lake Okanogan. Today the region is a paradise for hikers and high country skiers. See map at http://www.trails.com/activity.aspx?area=11100; access date 20 January 2013.

[5] For location, ca. 78.25° N and 15.54° E, you can write these coordinates in on the map, see http://toposvalbard.npolar.no/; access date 20 January 2013.

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Jóhann Páll Árnason & Björn Wittrock (eds.), *Nordic Paths to Modernity*, New York and Oxford: Berghahn Books 2012, ISBN 9780857452696, 288 pp.

Although the Nordic countries may not attract the same attention as they did when they were launched as a "middle way" between capitalism and communism, or were seen as providing a unique type of welfare state, there still remains a fair amount of interest in these countries among scholars around the world. Despite recent changes, the Nordic countries still seem to be able to combine a sense of equality and social justice with policy-making rationality and economic development. In Ronald Inglehart's World Value Map (Inglehart & Welzel 2005), which summarizes contemporary modernization attitudes, the Nordic countries stand out as a distinctive set of countries. Their citizens combine a strong sense of secularism and rationalism with an emphasis on post-materialist, self-expression values such as democracy and individualism.

Part of the interest in these countries lies in a curiosity about where they are heading. To what extent do welfare systems that have emphasized uniform access and public provision glide into a more liberal type of welfare regime? Can these countries continue to be among the least corrupt in the world, where citizens trust not only each other but also their public authorities? Or are these features gradually breaking down under the combined pressure of neo-liberal marketization and middle-class individualism?

Any understanding of these trends and developments requires an examination of how the Nordic countries came to be what they are, and in particular how they became modern. An important contribution, with that purpose, is the edited volume by Jóhann Páll Árnason and Björn Wittrock on *Nordic paths to modernity*. How did the Nordic countries become modern? To what extent do these countries share common historical traits and in what sense does the development of the welfare states diverge among countries? And what can be expected in the future?

The editors have collected a number of internationally renowned scholars who each contributes valuable insights. The common perspective is a historical-sociological approach which highlights not only developments over time but also how those are embedded in specific political, cultural, social and economic contexts. An introduction by the editors, where the main themes of the book are outlined, is followed by a general overview of the topic by Bo Stråth. He emphasizes that the development from military states to modern welfare systems were not path-dependent but instead went through a number of critical junctures. Although there are many traits that are common for the Nordic countries, such as the political role of the peasantry and highly significant social democratic parties, these are more important in some countries than in others.

The contributions discuss various aspects of the path to Nordic modernity. These include the changing relations between statehood and nationality in Denmark, the role of the "Age of Freedom" in Swedish history, the importance of knowledge regimes in nineteenth century Norway and how the Finnish development towards modernity was influenced by the country's proximity to Russia. Iceland is often omitted in Nordic overviews but has a prominent place in this

book. Together with Finland, Iceland is generally seen as an atypical case in a Nordic setting. A question discussed in two contributions is to what extent the Icelandic road to modernity was connected to the general Nordic development.

On the whole, this book is a highly informative contribution not only to the literature on Nordic modernization but also to the general understanding of present social and economic conditions in the Nordic countries. It should be appreciated by scholars in various disciplines mainly within the social sciences and humanities.

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Nikolaj Frydensbjerg Elf & Peter Kaspersen (eds.), *Den nordiske skolen – fins den? Didaktiske diskurser og dilemmaer i skandinaviske morsmålsfag*, Oslo: Novus forlag 2012, ISBN 9788270997077, 260 pp.

An anthology, edited by Nikolaj Frydensbjerg Elf and Peter Kapsersen, has been published by Novus forlag. The title is *Den nordiske skolen fins den? Didaktiske diskurser og dilemmaer i skandinaviske morsmålsfag* ['Is there a Nordic school? Didactic discourses and dilemmas in Scandinavian mother tongue education']. Education is becoming increasingly global and the anthology highlights how educational researchers are facing common problems across traditional national boundaries. The anthology is written to position didactic research problems in a Nordic perspective and the contributions are written by Nordic researchers on mother tongue didactics.

The anthology opens up with a preface written by Maria Ulfgard and an introduction by Peter Kaspersen. This is followed by articles of Gun Hägerfelth, Sylvi Penne, Ellen Krogh, Nikolaj Frydensbjerg Elf, Maria Ulfgard, Laila Aase, and Peter Kaspersen. There are also co-authored articles by Laila Aase and Gun Hägerfelth, Gun Hägerfelth and Dag Skarstein. Finally there is a summary by Ellen Krogh, Sylvi Penne and Maria Ulfgard. What the contributions have in common is that they share the same data set, namely, interviews with 26 teachers from Denmark, Norway and Sweden and they hope to contribute new knowledge about mother tongue didactics in these countries. I will select three contributions for a further review.

I will start with the contribution by Maria Ulfgard. She is interested in how teachers justify their professional work. Doing so, she introduces a distinction between justification by practice and justification by didactic reflection. Maria Ulfgard illuminates how teachers tend to let practical issues dominate lesson planning activities. Accordingly little time is spent on didactic reflections and teachers let themselves be governed by curriculum materials.

The second one is written by Nikolaj Frydensbjerg Elf, who has investigated media literacy. His main research question is whether media literacy is taught and how it is taught. What are the social conditions of teaching? The interviewed teachers argue that they do teach media literacy but they seldom report it in their logs. Frydensbjerg Elf poses the question whether this is a mere coincidence or a manifestation of the gap between theory and practice. Preferably, he would do well to study this in depth using a more ethnographic study in the future. Such a contribution would be most welcome, because numerous studies suggest a cleavage between teachers' self-reports and observations of teaching.

The third one is written by Gun Hägerfelth and Dan Skarstein. They discuss whether there exists common Nordic mother tongue didactic discourse from an ethnic heterogeneous perspective. They found that there are similarities as well as differences between the Nordic countries regarding attitudes towards ethnic and cultural heterogeneity. The authors found that the teachers' selection of literature is either traditionally Nordic or of Western heritage. Although there is literature from outside, external cultures and moreover internal literature problematizing our ethnically heterogeneous society, such literature is seldom selected by the teachers. Only the Danish teachers focus on a postcolonial perspective. They are very anxious not to over-emphasise the national perspective and are critical to the syllabus. This criticism is not to be found among either the Swedish or the Norwegian teachers. Now, the explanation as to why the Swedish teachers do not fit with the post-colonial description is that Swedish culture has been more receptive to the general cultural heritage of the West. Another difference to be found is that only in Norway is there a strong emphasis on a contrastive perspective in mother tongue education. In the Norwegian curricular documents there are comparisons between the different languages, and several of the interviewed teachers utilize language differences as a resource in teaching.

Summing up, as a whole the anthology, published in pocket book form, is well written, engaging and very interesting and I would highly recommend it to teacher educators, researchers and PhD-students interested in mother tongue education.

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Tuulikki Kurki & Kirsi Laurén (guest eds.), *Folklore. Electronic Journal of Folklore*, vol. 52, 2012, *Borders and Life-Stories*, ISSN 14060949, 144 pp.

The special issue of *Folklore* vol. 52, *Borders and Life-Stories*, has been edited within the research project "Writing Cultures and Traditions at Borders" (at the University of Eastern Finland). *Folklore*, the Estonian journal of folklore, is a venue for research articles and reviews within the field of folkloristics and related fields. The theme issue deals with the interdisciplinary field of border studies. The volume includes four research articles, review articles, an interview and news sections.

In the introduction, the editors Tuulikki Kurki and Kirsi Laurén give an overview of previous research in Border studies and position their work: the focus lies on "geographical, cultural and micro-level borders" (p. 8). As announced by the title, life-stories are a central theme in the articles of the journal. Life-stories include in this context published and unpublished memoirs of an oral and literary character. The borders discussed in the articles are both flexible, negotiated borders and restrictive, topographical borders. A central approach in the articles is to how these borders are dealt with in constructions of identities in narratives. Contributors to the issues are scholars in comparative literature, cultural studies and folklore studies. The research papers include two folklore articles based on folk narratives and two based on literary expressions.

Assistant professor of Folklore Research at the University of Tartu, Tiiu Jaago, studies in her article life-stories of an Estonian woman. Focusing on intercultural contacts, her research examines how events are interpreted and narrated from the perspective of the narrator. Jaago's narrative analysis pays attention to markers of social and cultural borders and illustrates how different cultures are intertwined and negotiated. Given the subjective character of the experience of borders, the analysis of autobiographical accounts is a relevant approach for the understanding of the interplay between different cultural spaces at a micro-level.

Kirsi Laurén, lecturer in Folklore Studies at the University of Eastern Finland, discusses the aspect of "fear" in border narratives based on personal narratives. In her article, the border in focus is the one between Finland and Russia. The informants are elderly; therefore the Second World War is a recurring motif in their accounts. Fear, introduced by Laurén as a central concept in her theoretical framework, is omnipresent in the material. The author connects convincingly the construction of place with the emotion of fear. However, the strong and manifest historical and geographical context of this specific border for a generation that has experienced the war trivializes the emphasis given to the concept of fear. Nonetheless, Laurén's study points at attitudes toward the Russian border in contemporary Finland and how reminiscence and memories persist and affect, still today, representations. Laurén's article is therefore a valuable study for questioning representations and constructions of otherness.

Tuulikki Kurki, researcher in Cultural Studies at the Karelian Institute, University of Eastern Finland, discusses in her article a novel by the Finnish writer Taisto Huskonen. The study examines how topographical and symbolical borders are enacted in narrating strategies for re-defining identities and otherness. From

this perspective, Kurki brings to the fore a topic of discussion of immediate relevance in a time where border crossing and cultural contacts are increasing.

"Ethnicity, cultural identity and bordering. A Tornedalian negro," by Anne Heith, associate professor of Comparative Literature at Umeå University, is the fourth research article in the issue. This analysis of *Rättipäät* ('Ragheads,' 1996), a poem by the Tornedalian author Bengt Pohjanen discusses colonialism and otherness. Heith examines how issues of multilingualism, revitalization and decolonization come to expression in the poem. It is a well-written article, although the voice of Pohjanen himself is missing: in an endnote, we can read a few words about information he provided about his poem. Heith has apparently been in contact with Pohjanen, and the author's comments and utterances about his own work would have been an important perspective to include in the analysis.

The interview with associate professor of English Literature Stephen Wolfe is an interesting and welcome contribution to the volume. Thinking of his prominent role in contemporary border research, as it is framed in the article (p. 109), one would have assumed and hoped that the articles in the issue would engage with his work.

The section "Review articles" includes a discussion of Knut Erik Jensen's film *Stella Polaris* (1993) around aspects of liminality, a review of the film *Raja 1918* (2006) and the review of a book (in Finnish) by Sami Lakomärki, Pauliina Latvala and Kirsti Laurén, *Tekstien rajoilla. Monitieteisiä näkökulmia kirjoitettuihin aineistoihin* ['Along textual borders. Multidisciplinary perspectives on written materials'] (2011). Under the categories "News in Brief" and "Book Review," we can read about recent doctoral dissertations: one on Lithuanian proverbs (Dalia Zaikauskienė 2012, Vilnius) and one on deaf name lore (Liina Paales, 2011, University of Tartu). A major benefit of these sections is that they increase knowledge about the work of folklorists outside English-speaking countries and Scandinavia. These news and reviews give us an insight into the state of the field in Finland and in the Baltic region within folklore studies.

The Estonian journal of folklore opens for communication between scholars in folklore studies from different countries. Scandinavian scholars often lack knowledge about publications and research outside Scandinavia and English-speaking countries. It is thanks to journals like *Folklore* that we can cross this border in the academia. Moreover, this special number is a great example of collaboration beyond borders—national, linguistic, and between disciplines.

With its varieties of contributions—from "traditional" research articles to reviews of films and books—this issue illustrates attractively the field of Border studies. One important aspect of the issue is the study of narratives from the perspective of folklore studies and literary approaches. This makes this theme issue of *Folklore* a qualitative contribution for a broad readership with interests in topics such as minority literature, narrative research and post-colonial studies. However, although the topic of *borders* in a broad sense successfully links together the four research articles, two of them have no or very little connection to folklore studies. Thinking of the amount of journals in comparative literature, one might wonder if *Folklore* was the most adequate venue for these articles.

The concept of border provides without doubt a fruitful angle of approach to the study of narratives, not least for the understanding of representations of otherness, cultural differences and articulation of identities. This perspective

also opens for further research about the boundaries created by perceived, imagined or materialized borders.

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Cornelia Lüdecke & Kurt Brunner (Hrsg.), *Von A(ltenburg) bis Z(eppelin). Deutsche Forschung auf Spitzbergen bis 1914. 100 Jahre Expedition des Herzogs Ernst II. von Sachsen-Altenburg*, München, Neubiberg: Schriftenreihe des Instituts für Geodäsie der Universität der Bundeswehr München 2012, Heft 88, ISSN 01731009, 120 pp.

This is a compendium in A4 format with two columns on each page. It comprises the proceedings of a conference held 24–25 September, 2011 at the Natural History Museum Mauritianum in the over one-thousand year-old town of Altenburg, Germany. The conference was a joint event organized by two associations, the German Society for Polar Research, and the Specialist Group on the History of Meteorology of the German Meteorological Society. The occasion was prompted by a centenary celebration of two events. One was the expedition to Spitsbergen undertaken by Duke Ernst II of Sachsen-Altenburg in 1911. The other was the establishment of the German geophysical observatory at Advent Bay, Svalbard in that same year (in 1912 this station was moved to Ebeltofthamna, Cross Bay where it operated until 1914).

I

Svalbard is a high latitude Arctic region that is much in the news nowadays. Interest revolves around new opportunities of natural resource extraction and profit gains from the Arctic seabed opening up by the diminishing extent of the sea ice. Current expansions of scientific activities combined with the popularity of polar tourism add further to greater public attention regarding the region. Some scholars refer to a "globalization of the Arctic" (Grydehøj *et al*. 2012). In this context historians, archaeologists and museologists are also bringing to light further findings regarding comparable trends in and around Svalbard in earlier times. The period from the late nineteenth century and into the 1920s is a particularly rich object of study in this respect since in those days one saw a proliferation of expeditions and mining ventures but also an early tourist industry and some daring aeronautic experiments in the region.

In the literature the efforts of North American, Scandinavian and British

ventures are fairly well documented. Perhaps less visible are French, German and Russian contributions, at least in the relevant Anglophone literature. In Germany Cornelia Lüdecke has done a lot to bring the efforts and achievements of German polar researchers and explorers to public attention by sifting through archives and other primary sources for relevant episodes and facts that had fallen into oblivion. Further, she has broadened and enlivened her reports on these matters by including information on how such early episodes and events tended to be represented in the media and therewith also in the public mind when they occurred.

In the very first issue of the *Journal of Northern Studies* Lüdecke (2007) gave an overview of some German activities and achievements in the Arctic covering the time from the First Polar Year (IPY) 1882/1883 until the Second IPY 1932/1933. That article has eight focal points, sweeping the historical lens across Svalbard and Greenland and on to the Arctic flight of the *Graf Zeppelin* in 1931 under the auspices of the International Study Association for Research in the Arctic by Airships (Aeroarctic). It also traces the Aeroarctics's links to the Second IPY via a number of personalities responsible for initiating the latter, thus demonstrating a historical continuity in which a number of Germans played an important role. The theme of the article (in German) in *Journal of Northern Studies* is "Science and adventure in the Arctic. Examples of German Polar expeditions" (Lüdecke 2007).

Regarding the period 1910–1914 let me for the sake of the record first recapitulate the topics in that paper that coincide with ones taken up in the publication reviewed here, namely:

The expedition of the Zeppelin Study Commission (1910).

The events that led to the establishment and work of the German geophysical observatory in Spitsbergen (1911–1914).

Wilhelm Filchner's use of Spitsbergen (1910) as a training ground to test equipment, logistic methods and men prior to his launch of the German Antarctic Expedition (1911–1912).

The ill-fated Schröder-Stranz Expedition to Spitsbergen (1912–1913) that was intended as a prelude to a German North-East Passage Expedition to proceed as A.E. Nordenskiöld had on the *Vega* through the seas north of Siberia. This goal was never realized, since Herbert Schröder-Stranz's preliminary expedition, which counted fifteen men disintegrated into several separate groups, some of which disappeared in the polar wilderness, resulting in eight deaths.

A comparison is made between factors assuring the success of Filchner's expedition and the factors that led to the tragedy of Herbert Schröder-Stranz's privately sponsored efforts after the expedition schooner *Herzog Ernst* (named after his sponsor the Duke Ernst II of Sachsen-Altenburg) got caught in the sea-ice.

Three expeditions launched to search for the missing men are also mentioned, namely Kurt Wegener's spontaneous rescue operation, Theodor Lerner's rescue attempt using the ship *Lövenskiöld* that fastened in the pack-ice and sank whence its members also had to be rescued, and Arvid Staxrud's rescue expedition, which was more successful.

In the publication *Von A(ltenburg) bis Z(eppelin)* four papers delve more deeply into the polar episodes just mentioned. The other six add further to the account of German activities relating to science, exploration and entrepreneurial endeavours in the Svalbard region, in this case starting in 1905 and ending in the early 1920s. In what follows some of the topics of the different papers are briefly noted and, with reference to other sources, I add some comments to point out how the issues of polar tourism and nature protection in Spitsbergen had also already been raised over one hundred years ago.

II

First off in the conference volume is Alexandra-Kathrin Stanislaw-Kemenah, who gives an account of the now forgotten travels to Spitsbergen of the zoologist and ornithologist Alexander Koenig, who was there three times in the years 1905–1908. The author points out that the man, in keeping with a practice of his time, used two modes of presentation, one strictly scientific for learned journals and one literary hybrid form meant for an educated public—the differences between the two genres are nicely outlined and discussed.

Margitta Pluntke, who works at the Natural History Museum in Altenburg, describes Duke Ernst II's trip in 1911 to Spitsbergen on a sailing yacht *Senta*, which among other things went into Isfjorden and Advent Bay. Sledges were man-hauled across a part of the Nordenskiöld glacier; topographical work has left names on the present day map and natural history collections were put together for the museum back home in Altenburg.

In a third paper, Uwe Gillmeister, a resident of Altenburg, provides a short account of the Duke's life as a Prince of the house of Sachsen-Altenburg, who early on developed an interest in geography, astronomy and technological developments, had a military career and in 1908 became the constitutional head of the Duchy of Sachsen-Altenburg, one of the tiniest of all German duchies. He was a patron of theatrical arts, and supported aeronautic ventures, having a hand in establishing an airfield near Altenburg. To his castle in Altenburg he also invited famous figures like Sven Hedin and Fridtjof Nansen to find out first-hand about their exploits. After the fall of the German Empire he abdicated from his throne but in 1934 he regained the right to use his princely title. In 1943 he donated his residential castle to the town of Altenburg. After the Second World War he was the only former ruler of a German duchy to remain in the "East" as a citizen of the German Democratic Republic, albeit stripped of his property and wealth. Gillmeister's paper provides a window on a rather unique bit of German history that for some readers may whet an appetite to read his thick book on Duke Ernst II's life and work (Gillmeister 2009).

The fourth paper is by Hans Steinhagen. It is entitled "Forscher, Abenteurer, Retter—die Spitsbergenexpeditionen von Kurt Wegener, Herbert Schröder-Stranz und Theodor Lerner 1912/1913." As the title suggests it details some of the episodes already mentioned above with reference to Cornelia Lüdecke's article of 2007. Here we learn more about the background and creation of the geophysical observatory at Ebeltofthamna and the meteorological data obtained there by means of various types of weather balloons. It is pointed out that these data sets are still valuable today in connection with climatological studies in the Arctic.

It is also noted that determinations were made of the height of northern lights in the skies using simultaneous photographic images coordinated by telegraph between the main station and an auxiliary station.

The second part of the paper traces the various twists and turns of Schröder-Stranz's expedition and the struggles of its different groups and individuals (see also Barr 1984). There follows an account of the various search and rescue attempts (five in all, it appears) and some of the main actors, particularly Theodor Lerner. In conclusion reference is made to much later expeditions that came across remnants of the lost Schröder-Stranz party.

The sequel to Steinhagen's paper is one by Karsten Piepjohn. He goes even deeper into the events of the Schröder-Stranz expedition and the various search and rescue operations, listing the names of the men in the different expeditions and how some of these names are now attached to various topographic, coastal and glaciological features in Svalbard. In addition there is a map showing the main places (with dates) and routes of all the different expeditions. This is complemented with a mapping of *who was where when*, plotted on a time-scale running from 5 August 1912 to 16 August 1913 in a large table indicating parallel movements of the various actors in and between different localities. It is a *tour de force* and takes some time for the uninitiated reader to get used to the table's intricacies to actually "read off" which groups were in what locality at any given moment.

Paper number six is by Kurt Brunner and Cornelia Lüdecke. It repeats some of Lüdecke's earlier discussion of Wilhelm Filchner's so-called training expedition of 1910 to Spitsbergen and adds a lot more information about the case. Emphasis is on the science: fundamental geodesic work needed for triangulation of base lines, the cameras used in photogrammetric work on a traverse along a stretch of the inland ice, as well as the construction and elaboration of maps and their relationship to previous maps. Eighteen names appearing in Filchner's glaciological mapping, it is noted, have been taken over in Norway's official list of names in Svalbard. This attests to the significance of the man's cartographic contribution. The two authors explicitly situate this contribution in a longer tradition of cartography with particular reference to glacial features.

The next couple of papers concern visions of industrial development and a couple of failed German projects. Stefan Przigoda of the German Mining Museum gives a substantial political and economic-historical overview of German interests in the Svalbard region. He contextualizes the journalist Theodor Lerner's oft-cited plan to set up coal mining on Bear Island (south of Spitsbergen) and how and why it failed. In connection with his visits 1898 and 1899 to explore the viability of such a move, Lerner actually claimed ownership of the often fog-bound Bear Island on behalf of the German Empire, generating some high-level diplomatic problems. This coup and other episodes in Lerner's life form the basis of a German novel entitled *Der Nebelfürst* ['Prince of the Fog'] by Martin Mosebach (2001). Lerner spent an impressive six summers and one winter on Svalbard in the period between 1896 and 1914.

It may be added that in 1908 Lerner overwintered on Spitsbergen together with Hjalmar Johansen (who had been a member of Fridtjof Nansen's expedition on board *Fram*) and then travelled with him over the inland icescape from Isfjorden to the tip of Spitsbergen's northwest coast, a remarkable adventure that

probably sparked Schröder-Stranz's (as it turned out suicidal) idea to try to cross Nordaustlandet on the other side of Hindlopen Strait.

Frank Berger, Curator of the Historical Museum in Frankfurt am Main, goes further into Lerner's eighteen-year-long passion to turn a profit in the Svalbard region. It all began in 1896 when as newly employed journalist for the *Berliner Lokal Anzeiger* Lerner first covered Andrée's preparations for a flight with his hydrogen-filled balloon *Örnen* (and again in 1897 when he claims to have waved off Andrée and his men), and continued right up to 1914 when the First World War abruptly put an end to new ventures. Apart from the story of Lerner's idea of directly supplying whalers and tourist vessels with coal, Berger outlines the man's dream of a multifaceted tourist industry and we are served titbits of information regarding some of the tourism that was already going on, accelerated in the early 1890s by Captain Wilhelm Bade of Wismar in Mecklenburg, who was the father of cruise-ship tourism. Details of Lerner's dream of setting up a tourist hostel and running a kind of agency are illustrated with a couple of images of the design plan for such a facility (complete with roof-top viewing tower) drawn by an architect friend of Lerner's in Frankfurt.

Much of Berger's account leans on Lerner's important autobiographical manuscript of 1930, which Berger edited and published as a book that includes over 75 photos (reproduced from original glass negatives) and a number of maps (Lerner 2005). In a review of that book William Barr finds that it first of all throws interesting new sidelights on the many events in the history of Svalbard that were already well documented and secondly provides the first details of lesser known events (Barr 2006; see also Gerland 2006). Lerner's recollections, however, are not entirely trustworthy, as in the case of his depiction of a supposedly conflict-free time with Hjalmar Johansen, whose own account suggests the opposite. We also know today that Lerner personally was not there to see Andrée take off from Danes Island (hotel records show he was actually in the Isfjorden area—Anders Larsson, personal communication); he only had a fellow reporter at Danes Island to cover the scene, so his use of the term "we" in his report of the event cannot be taken literally but only as a manner of speaking—as such it probably lent greater authenticity to a good story and credibility to the later myth that Lerner too was an "eyewitness."

III

The interested reader may also want to consult John T. Reilly's richly illustrated book (with images of photographs, postcards and stamps) *Greetings from Spitsbergen. Tourists at the Eternal Ice 1827–1914* (Reilly 2009). With its many vignettes it casts much more light on the broader subject, even if the timeframe in the title is misleading. For the period 1881 to 1914 Reilly lists over 100 tourist voyages, many of them on large luxury cruise steamships coming from various countries to visit Spitsbergen. The greatest intensity was after 1906, the year in which Walter Wellman set up his balloon expedition headquarters at Virgo Bay on Danes Island, Svalbard. The polar historian P. J. Capelotti reckons that

> by the time Wellman began constructing his airship hangar at Virgohamna in the summer of 1906, the requisite infrastructure was there to support a Svalbard tourist industry that was by then in full swing. (Capelotti 2011.)

Being the site of the Swede Salomon Andrée's fateful expedition of 1897, commemorated with a monument, and then Wellman's highly publicized pioneering experiment with a huge hangar for his cigar-shaped dirigible airship, plus a variety of equipment including a motorized sledge, Virgo Harbour was an obligatory stopping point on the Spitsbergen tourist circuit. Backed by a Chicago newspaper, the journalist-cum-adventurer and aeronautic entrepreneur's so-called Wellman Chicago Record Herald Polar Expedition was for a few years something that was guaranteed to evoke welcome stories for newspaper readers in many countries.

An example is the Swedish geologist Otto Nordenskjöld's article for his hometown newspaper *Göteborgs Handelstidning* (6 August 1906). It focuses on his encounter with Wellman and gives a favourable assessment of the man's plans for a new generation of aeronautic operations, although he strongly doubted the usefulness of the motorized sledge on a chaotic terrain of sea ice. Fridtjof Nansen, who had visited Spitsbergen in 1912 and landed at Virgo Harbour was more critical, and even sarcastic, saying "It was here, then, that the American Wellman spent several years inflating his expedition and his airship" (cited after Diesen & Fulton 2007, who write about an obscure short film with scenes from the Wellman camp by a skilled cinematographer, Emile Lauste, who was there in 1906 as a member of Nordenskjöld's tourist group on the *Ile de France*).

Actually Nordenskjöld was the leader of a four-week cruise in 1906. He had been hired by Louis Olivier, the director of the Paris-based journal *Revue générale des Sciences*, to act as scientific guide for about 180 tourists on the *Ile de France*. Being a renowned scientist of Antarctic fame, his name was an important asset in stirring up interest in this *Voyage d'étude* ['study voyage']. On the cover of a remarkable little 90-page booklet that Olivier produced he is featured as "the illustrious explorer of the polar world." The booklet is written in an educative style, serving as a prospectus illustrated with small pictures and maps in its outline of different phases in the itinerary. Its purpose was to introduce participants to the marvels of the Norwegian fjords, Trondheim, Tromsø and then Spitsbergen, with descriptions of landscapes, flora and fauna, sites to be visited and a number of optional excursions for hunting foxes, seals, roping reindeer, and other activities (Olivier & Nordenskjöld 1906).

Anders Larsson, polar historian and senior librarian at Gothenburg University, has drawn my attention to correspondence indicating that Nordenskjöld was paid 1,000 Swedish crowns for this one-month job, roughly the equivalent of one third of his annual professor's salary in Gothenburg. The case is also interesting in that it illustrates the interplay at the time between polar research and tourism, a topic that certainly deserves more extensive studies, also in a critical perspective.

Nordenskjöld estimated that every summer about twenty large tourist steamers brought masses of people, and he expressed concern that these swarms of tourists together with economic exploitation were destroying Spitsbergen's animal life and natural landscape, which he thought sorely needed protection; for conservation to happen he hoped for some kind of "order" or what we now call regulation, perhaps—he says—in the form of a vast "Nature Park" that would be accessible to nature-loving tourists (Nordenskjöld 1907). This view differed from that of a polar lobby of Stockholm-based scientists who strongly eschewed tourism and wished to keep Svalbard's islands a reserve not so much for wildlife, but for scientists themselves (Wråkberg 2006).

Nature protection was a question that was on the agenda of a series of northern country (Norway-Russia-Sweden) conferences on Spitsbergen held in Kristiania 1910, 1912 and 1914 to discuss the region's management. In the latter year a plan, written on the basis of input from fifty-five scientists and explorers to an international questionnaire, was submitted to the conference (Conwentz 1914*a*). The author was Hugo Conwentz, a dynamic Prussian professor and director in Berlin of a newly founded *Staatliche Stelle für Naturdenkmalpflege in Preussen* (Central Institute for the Care of Natural Monuments). In an article in English Conwentz (1914*b*) described that institute and a range of experiences with nature conservation from several countries; his Kristiania-memorandum (Conwentz 1914*a*) ended up being distinctly negative towards tourist hunters visiting Spitsbergen on cruising steamers and private yachts. At the peace conference in Paris 1919 that led to the Spitsbergen Treaty his memorandum was however ignored because of its German origins (Wråkberg 2006). As Norway was granted sovereignty over the Svalbard region, it now fell to Norwegian scientists, legal experts and administrators to craft the subsequent regulatory frame of governance that definitely included nature protection (Hoel 1926).

It is interesting to note here that Ernst II von Sachsen-Altenburg and Count Ferdinand von Zeppelin, in response to Conwentz's questionnaire, were the only ones who pointed out the need to protect the cultural heritage of Spitsbergen (Wråkberg 2006). This was a further issue that Nordenskjöld also noted in 1906. When landing at Wellman's camp he saw how it was a common practice among tourists to collect as "souvenirs" bits of the remnants of Andrée's balloon house, a stone from the memorial mound or a piece of wood with the expedition's address, alternatively sawing away the blue and yellow flag emblem painted on the wood (Nordenskjöld 1907). Another witness reported scathingly how looting had become epidemic; even skulls and bones from old whalers' graves found their way into homes of the rich in capital cities as trophies displayed in drawing-rooms (Gottberg 1906). Duke Ernst II, also critical of this scandalous practice, argued that the captains of tourist ships should issue and display clearly visible rules to stop it (Conwentz 1914*a*: 108); Count von Zeppelin expressed a similar view (Conwentz 1914*a*: 127–128).

After leaving Virgo Harbour the *Ile de France* ran into trouble, grinding to a halt on some submerged rock when on its way into a remote and rarely visited fjord further north. Fortunately at another obligatory tourist site, Smeerenburg, a powerful Dutch naval cruiser, the *HMS Friesland* sent by Queen Wilhelmina, was on a special mission to install a memorial cairn after "putting in order the graves of old Dutch whalers so disrespectfully treated by visitors in recent years" (Conway 1907: 661). Thus it happened to be in the neighbourhood and was able at high tide to pull the French ship free. This was after the inevitable Theodor Lerner—who also happened to be in the vicinity guiding a two-week hunting excursion (with a few paying tourists) on a small charter vessel—had picked up the *Ile de France*'s distress signals, but unable to help, he hailed the *Friesland* to come to the rescue. As a journalist Lerner had fortuitously taken a break from his journalist task of covering Wellman's preparations for an aeronautic North Pole voyage with the French built dirigible airship *America*. This episode is of course also part of Lerner lore in Berger's paper, and Lerner's autobiography has an entire chapter devoted to it. What is not told but appears from Olivier's letters to

Nordenskjöld afterwards is that a call from some quarters to recognize Lerner's action with the award of a Legion of Honour was opposed by the French Maritime Ministry and came to naught.

IV

Wellman finally did manage to make very short trial flights with his airship in 1907 and 1909. Even if the intended flight with a motorized airship to the North Pole never materialized, his efforts and self-advertising publicity stunts did kindle wider interest in the new technology for polar travel. Stories circulated about a German journalist, the *Berlin Lokal Anzeiger*'s New York correspondent, Otto von Gottberg, who was living in a little green tent with a German flag on it at Wellman's base camp in 1906 (picture in the newspaper's weekly supplement, Gottberg 1906: 1756). Rumour had it that he was actually a spy sent by the German General Staff to report on the American's progress (Capelotti *et al*. 2007). In July 1909, one month prior to Wellman's final attempt, Count Ferdinand von Zeppelin announced his own intention to reach the North Pole in an airship, a plan shortly afterwards curtailed for several reasons, but he did initiate a feasibility study expedition for the following year to look into the prospects of trans-polar aviation.

Wellman's adventure at Virgo Harbor, it must be remembered, also cost a couple of persons their lives. This is recorded in the diary of Paul Bjørvik, which adds a further perspective to the Wellman episode. A couple of Norwegian *fångstmän* ['fishers and hunters'] had been hired to look after and guard Wellman's facility during the extremely severe winter of 1908–1909. During a hurricane the balloon house blew down onto its side and was wrecked on the second day of Christmas, and in May of the following year one of the Norwegians fell badly when on an ice floe, drifted into the sea, and drowned. Bjørvik writes:

> Wellman's polar tours have now cost two men their lives. Probably there will be no more because now he is compelled to finish soon. Here now two balloon houses lay in ruins. Andrée and his men are dead ... and what use is it altogether. What has one gotten back from all those millions that were raised in order to proceed a couple of lousy degrees further northward? (Cited in Holmsen 1911: 61.)

Here, then, we have a "view from below" as it were, reflecting the thoughts of some of the workmen needed to sustain Wellman's activities on the ground, in this case a practical polar veteran who had overwintered many times in Spitsbergen and had even participated as ice pilot on the *Gauss* during Erich von Drygalski's German National Antarctic Expedition 1901–1903. According to Bjørvik it was all very well with these grand expeditions that brought honour to the nation and explorer alike, but actually the man who had invented the snowplough had contributed something of greater use to the world.

The final two papers (9 and 10) in the volume under review here deal, respectively, with the "Zeppelin Study Expedition of 1910" and a later case of German ingenuity in aeronautics, namely, a Junkers F 13 all-metal low-wing monoplane adapted for polar conditions and aerial reconnaissance over Spitsbergen 1923 using advanced aerial photographic techniques.

Zeppelin had obtained the Kaiser's patronage for an airship expedition to the North Pole with the renowned meteorologist Hugo Hergesell as adviser. The immediate task became one of investigating the feasibility of conducting Zeppelin flights in the Artic by determining the variability of winds and mobility of upper air masses. To this end a series of launchings of weather kites and both free and captive balloons occurred in 1910. Cornelia Lüdecke's paper outlines the background of this project and the subsequent developments including the establishment of the first permanent geophysical station in Spitsbergen, one managed by two observers 1912/1913, relieved by two others for August 1913 to September 1914 (when the operation ended because of the war). Her brief account gives a nice overview of the numbers, locations and probing heights of the aerological investigations at various sites in order to find a suitable location for a future airship port; the station operated more or less continuously during daylight hours for the cited period to probe the structure of the atmosphere at this strategically situated site in the Arctic.

The author also explains that this was an important step in a process that continued after the war with the advent in 1924 of the International Society for the Exploration of the Arctic Regions by Means of Aircraft (Aeroarctic) and the use under its auspices of a Zeppelin dirigible craft in 1931 as a research and exploration platform in the Russian Arctic. The vision of the Aeroarctic regarding air travel over the Arctic and also its catalytic role in the origins of the Second IPY is a topic Lüdecke has taken up several times elsewhere (e.g. Lüdecke & Lajus 2010).

In the final paper of the Lüdecke-Brunner volume, the historian of film technique at the Potsdam Film Museum, Ralf Forster, has his point of departure in a fifteen minute black-and-white silent film. It dates from 1923 in the context of the first winged airplane flight over Svalbard, that is, the Junkers Spitsbergen expedition. The man behind the camera was Walter Mittelholzer, whose book (see below) Forster also takes up together with other sources deriving from the Junkers archives to sketch the background of the expedition and its ultimate significance. The film and some photographs had served in campaigns to advertise the company's prowess as a cutting edge producer of a reliable airplane that could be used for many purposes. Although not intended for cartography as such, a number of Mittelholzer's photographs did play a role in correcting certain aspects on Gunnar Isachsen's Spitsbergen map of 1911/1912, and they are still of interest today in visual studies of retreating glaciers (see http://fof.se/tidning/2012/10/artikel/smaltande-glaciarer). The expedition itself was a serendipitous spinoff from a quite different project.

The First World War boosted airplane design and manufacturing immensely. This was followed by a rapid development of commercial aircraft for postal and passenger services. A pioneer was Hugo Junkers, a professor of mechanical engineering, who devised the world's first practical all-metal aircraft design. The Junkers F-13, as it was called, was a reliable, fuel-efficient, safe and convenient plane with two seats up front for a pilot and navigator and behind them a little enclosed and heated cabin for four passengers with doors and windows on the fuselage sides. Conventional landing gear was replaceable by floats and skis. The plane set new records for altitude and distance and became in the 1920s the best-selling commercial aircraft of its time. Already in 1919 John Larsen, a manufacturer in the United States, signed an agreement

with the German Junkers Co. to assemble and market it in North America under the name JL-6.

It was one of these exemplars Roald Amundsen purchased when the first phase (1918–1921) of his expedition on the *Maud* failed in its goal of drifting with the sea ice over or near the North Pole. The new plan was to fly from Barrow, Alaska, over the North Pole to Spitsbergen. After a year's delay the attempt was scheduled for June 1923. Preparations for a relief expedition were simultaneously afoot in northern Europe to proceed from Spitsbergen in the other direction to find Amundsen's plane in the event he did not make it but got stranded somewhere along the way on the Arctic sea ice or in Nordaustlandet. For this purpose an F-13 plane was sent on board regular steamers from Hamburg to Bergen, then Tromsø and on to Spitsbergen. Besides its main task of preparing the relief expedition a secondary goal was to test the plane under Arctic conditions and do some pioneering aerial reconnaissance and photography.

The group accompanying the plane included the geoscientist professor Kurt Wegener (earlier involved in the German geophysical station at Cross Bay, see above), who briefed the pilot and photographer on the weather, geographic and essential geological features of the territory. On the way to Tromsø a radio telegram was received informing the party that Amundsen's plane in Alaska had buckled its ski-converted landing gear during a test flight and therefore Amundsen cancelled his own expedition. The Junkers Co. nevertheless decided to continue with its part of the project and now improvised to turn its secondary task into the chief objective. What followed is usually recognized as the first Arctic airplane flight, and it resulted in a series of fantastic birds-eye-view high quality photographs taken during three major aerial excursions, capturing images of coastal features, islands, glaciers, high inland mountains and the Hindlopen Strait. The longest flight undertaken in July 1923 lasted a bit short of seven hours and covered around 1,000 kilometres. A key figure in all this was the Swiss alpine sportsman, photographer and reserve pilot Walter Mittelholzer, who made the aforementioned film and put together an important little book containing 48 original pictures and four sketches of maps (Mittelholzer (ed.) 1924). The entire episode is nicely captured in Forster's paper.

V

Taken altogether the ten papers in the Lüdecke-Brunner volume indicate how early German engagement with Svalbard was definitely significant in the fields of science and technology but left no lasting imprint on the economic history of the region. The compendium has an encyclopaedic character. Maximal factual information is pressed into limited space, allowing little room for a lighter narrative or an argumentative style that engages with other authors on the same topics. The text is densely interspersed with lots of names in LARGE LETTERS (often with dates of birth and decease in a parenthesis), irritants to an avid reader's eye. The reproduction of many interesting original photographs, maps, sketches and tables is important for the historical record, but the quality is poor as may be expected in a compendium of this kind. Specialist scholars will find the volume useful while the general reader will feel less motivated to push on through all the entries.

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Sigmund Ongstad (ed.), *Nordisk morsmålsdidaktikk. Forskning, felt og fag*, Oslo: Novus forlag 2012, ISBN 9788270996988, 332 pp.

Didactics is a hot topic in Nordic studies. Perhaps one reason is that didactics is a fairly new discipline in the Nordic countries compared to countries such as Germany. In a recently published anthology several researchers come together to illuminate problems and opportunities of the field of mother tongue didactics. *Nordisk morsmålsdidaktikk. Forskning, felt og fag* ['Nordic mother tongue didactics. Research, field and subject'] is the title of the anthology. It is edited by Sigmund Ongstad. This impressive work in the area of subject didactics has many interesting contributions. Due to lack of space it would have been impossible to comment upon all of them. Consequently I have selected a sample for a further review. The anthology opens up with a preface and an introduction written by Sigmund Ongstad. This is followed by articles of Peter Kaspersen, Jon Smidt, Ria Heilä-Ylikallio and Anna-Lena Östern, Caroline Liberg, Elise Seip Tönnesen, Bengt-Göran Martinsson, Maj Asplund Carlsson, Per-Olof Erixon, Ellen Krogh and Sylvi Penne. Finally there is an article by Sigmund Ongstad.

I will start with the contribution by Per-Olof Erixon at Umeå University where he carefully examines the research in the field of didactics during the last two decades. Erixon has also carefully examined 21 yearbooks published by the association of teachers in mother tongue education (*Svensklärarföreningen*). He found that 13 of the yearbooks had one or several articles with a focus on youth culture and new media. According to Erixon this must be regarded as a fairly high number. Although it is a very important, interesting and well-written article I

find two problems in my reading. Firstly I cannot help wondering why Swedish didactics is not explicitly compared to global tendencies in subject didactics related to the topic of technology. That is because these tendencies are supposedly part of a global phenomenon of the educational system. Secondly teaching is governed by its own set of rules and is thus likely to adapt new technologies in accordance with the logic of the institution. However, the author does not explicitly comment upon what happens when new technology becomes institutionalized within the settings of education.

Ria Heilä-Ylikallio's and Anna-Lena Østern's article takes a holistic perspective on the development of the university subject of mother tongue education during the last 40 years in Finland. They have the necessary insight into the development, and it is especially interesting to read the text that embraces the Finnish majority perspectives as well as the Swedish-speaking minority perspectives. The successful literacy development among Finnish pupils is well known from PISA results, but what the makers of this success think as researchers and what they focus on have been less well known outside the country. Heilä-Ylikallio and Østern have interviewed 12 researchers who have been engaged in the development of mother tongue didactics in teacher education in the period 1970 to 2012. They found that as part of developing teacher education the 12 researchers have also written textbooks, and produced tutorials. One example is the *Litteraturboken* series (developed by a team including Heilä-Ylikallio and Østern) in which multimodality, interpretations of visual culture, visual art and drama put art-based learning processes into focus. The larger picture is that these teacher educators formed mother tongue education into a university subject, and a subject suited for the new millennium with focus on a broad text concept. Some of the teacher educators have also functioned as chairpersons in the association of teachers of mother tongue education and have served on editorial boards of journals focusing on subject didactic matters. The authors also highlight that Finnish researchers on mother tongue didactics thus take an active part in the societal discourse. Heilä-Ylikallo regularly writes editorials on her blog. Furthermore the authors illuminate that (compared to Sweden) making teacher education "more scientifically grounded" is not a major issue in Finland, because this has been the standard in Finland for over 30 years.

Jon Smidt raises an interesting question in his well-written and coherent article. He highlights different researchers with different backgrounds: linguistics, comparative literature and mother tongue didactics. The point of departure for most of these disciplines has been socio-cultural theories and writing has been regarded as a social practice. Previous research has focused upon the context of writing and how it has been organized by teachers within a socio-cultural system. Such an understanding of writing in which the text is reciprocally produced by the individual and the socio-cultural system has been the precondition for Norwegian research on writing for students of all ages. Most of the Norwegian research within the area of writing uses terms and concepts from socio-cultural theory. However, there are exceptions. Smidt highlights the importance of the research on writing at Lesesenter ['Reading Centre'] in Stavanger, where the researchers have focused on reading and writing problems. Within the area of reading or writing problems, they use different terms and concepts from a cognitive perspective.

Summing up, the anthology is engaging and very interesting, and can be highly recommended to those interested in subject didactics.

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Marsha Keith Schuchard, *Emanuel Swedenborg. Secret Agent on Earth and in Heaven. Jacobites, Jews, and Freemasons in Early Modern Sweden* (The Northern World 55), Leiden & Boston: Brill 2012, ISBN 9789004183124; ISSN 15691462, xviii + 804 Seiten.

Seit mehreren Jahrzehnten (vgl. Schuchard 1988) ist M. K. Schuchard mit einschlägigen Studien zu dem Zusammenhang zwischen Swedenborg, freimaurerischen Untergrundbewegungen und Thesen zu den Verwicklungen zwischen Politik, Judentum, Sexualität und Spiritualität[1] als Vertreterin einer singulären Sonderposition hervorgetreten, die sie beharrlich vorgetragen hat—gegen den ebenso beharrlichen Widerspruch seitens der akademischen Swedenborg-Forschung sowohl aus dem Umfeld der *New Church*, die sich selbst auf Emanuel Swedenborg beruft (Tafel 2002; Talbot 2007; Williams-Hogan 1998), als auch der akademischen Forschung zum Masonismus (Snoek 2003). Es sei vermerkt, dass Schuchards Arbeitsergebnisse ungeachtet dieser Kritik auch übernommen worden sind, und zwar in solch anerkannten Werken wie Jocelyn Godwins *Theosophical Enlightenment*, allerdings ohne weitere eigenständige Prüfung (Godwin 1994: 95–97, 103 f.). Trotz der substantiellen und auch schwerwiegenden Angriffe auf ihre Arbeitsweise und auf ihre zuweilen als Tatsachenbehauptungen ausgegebenen Hypothesen[2] hat Schuchard unbeirrt weitergearbeitet und nun ein *opus magnum* vorgelegt, das ganz offensichtlich auf jahrzehntelangen Forschungen beruht und als Zusammenführung ihrer bislang in Einzelstudien verstreuten Ideen gelten kann. Es ist als Band 55 der renommierten Reihe *The Northern World* bei Brill in Leiden erschienen.

Dem Rezensenten, der die zurückliegenden Debatten kennt,[3] stellt sich die neugierige Frage, ob die entscheidenden Quellen nun endlich aufgedeckt werden, die Schuchards Theorien belegen und deren Fehlen oder mangelnde Stichhaltigkeit von ihren Kritikern seit Jahren moniert worden war. Und er ist nicht verwundert, dass er klar ausgesprochen die Front findet, gegen die das Werk gerichtet ist: gegen die hagiographische Sicht mancher konservativer Swedenborgianer soll das angebliche, nun ans Licht getretene Beweismaterial (*evidence*) ausgebreitet werden, das Swedenborgs „sehr geheime politische und diplomatische Aktivitäten“ als Spion und Geheimagent belegt (ix). Von hier aus

gesehen täuscht der Titel etwas darüber hinweg, dass es in erster Linie um Swedenborg geht. Der politisch-masonisch-kabbalistische Untergrund, den die Arbeit zu erhellen verspricht, dient im Grunde nur als ein mit sehr engen Maschen gesponnenes Netz, durch das Swedenborg aufgefangen und erklärt wird. Die Singularität des Swedenborgbildes, das Schuchard schon früher ausgezeichnet hatte, soll durch dieses Netz nachhaltig bekräftigt werden. Gegen Swedenborgs Hagiographen war also, so Schuchard, endlich eine streng historische und auf internationaler Ebene kontextualisierte Biographie vonnöten gewesen (ix). Die Betonung der Historizität von Vorgehen und Anspruch leuchtet zwar ein, verwirrt den Leser aber während der Lektüre zunehmend. Denn in der Tat zeichnet Schuchard ein glühendes, leuchtendes, überaus farbiges Panorama der europäischen und besonders nordischen und schwedischen politischen und kulturellen Verhältnisse im *Siècle de Lumierès*. Das erklärt ihre Begründung: Sie arbeitet als Literaturhistorikerin, die über Blake, Yeats und Joyce auf Swedenborg und seine Verwicklung in rosenkreuzerische und masonische Netzwerke gestoßen sei (xii). Wie Schuchard die Verbindung aus Literatur und Historiographie versteht, wird so biographisch deutlich. Noch einleuchtender wird ihre Sicht dieser Verbindung durch ihre ausdrückliche Referenz auf John Le Carré, der vom Top-Agenten zum bestbezahlten Krimi-Autor avanciert sei und betont habe, dass die patriotische Geheimdienstarbeit für ihn immer eine „moralische, fast spirituelle Anziehung" (xv) hatte. Genau so will Schuchard Swedenborg verstehen: als jemanden, der seine religiösen Prinzipien und seine säkulare patriotische Spionage nicht im Widerspruch sah.

Und genau auf dieser Ebene sollte auch Schuchard selbst gelesen werden. Die Agenda, mit der Swedenborg in seiner Zeit beschrieben wird, ist die Agenda John Le Carrés. Der Geheimagent der Queen gibt das Instrumentarium zur Dechiffrierung geheimer Literatur, verschlüsselter Visionen und verschwundener Fäden, die verborgene politische Netzwerke aufdecken. Denn es ist klar, so Schuchard, dass sie angesichts der verdeckten Aktivitäten von Geheimagenten mit Beweisfragmenten arbeiten muss (xii). Gäbe es hier Klarheit, so müsste der Rezensent ergänzen, dann hätte der Geheimagent (Swedenborg) unsauber gearbeitet, er hätte seine Tarnung auffliegen lassen. Also bleibt der historischen Kriminalistin nichts anderes übrig, als minutiös und Monat für Monat die Details des historischen Kontextes des Geheimagenten zu untersuchen (xiii), und genau das tut sie auf 760 Seiten.

Im Ergebnis ist eine Studie über den Zusammenhang zwischen esoterischer Intelligenz und exoterischer Politik (xvi) entstanden, die man am besten als genau das versteht, was Schuchard selbst durch ihre Fährte auf John Le Carré nahe gelegt hat: als einen historischen Spionagethriller, der im Unterschied zu gewöhnlichen Thrillern einen Anmerkungsapparat und ein Literaturverzeichnis enthält. Diese Vorentscheidung würde davon entlasten, in Schuchards Thesen einen Beitrag zur Erforschung Swedenborgs, der Freimaurerei oder der Politikgeschichte und Kulturgeschichte des 18. Jahrhunderts sehen zu müssen. Dann allerdings könnte der Rezensent seine Lektüre beruhigt in die Feierabendstunden verlegen und sich über die niveauvolle Phantasie, den unglaublichen Personen- und Faktenreichtum und das scharfsinnige Assoziationsvermögen eines Buches freuen, das mit Le Carré keinen würdigeren Namenspatron haben könnte. Ihm ist aber die Aufgabe gestellt, eine Prüfung vorzunehmen und ein Urteil abzuge-

ben, da sich die bisher vorhandene und oben genannte Kritik an Schuchards Thesen offenbar nicht überall herumgesprochen hat und es angesichts gelegentlicher positiver Rezeptionen (Godwin 1994) nötig erscheint, zu erklären, wie sich das Verhältnis zwischen phantasievoller Literatur, Historiographie und einer geheimdienstlichen Agenda auf die Komposition des vorliegenden voluminösen Buches über Swedenborg, Jakobiten, Juden und Freimaurer niedergeschlagen hat. Ich möchte in folgender Weise verfahren.

Zunächst werde ich Beispiele dafür anführen, wie Schuchard mit dem Problem umgeht, dass der Geheimagent keine echten Spuren hinterlassen hat. Wie liest man solche Quellen, wie schafft man es, aus Unsichtbarem, aus *hints* und kryptischen Winken eine Story zu bauen? Danach werde ich Beispiele bringen, wie die Argumente für die Neuverortung Swedenborgs gestrickt werden: als philosemitischer kabbalistischer Netzwerker, als unverzichtbares Mitglied und bezahlter Agent eines europaweiten Geheimdienstes, der die politischen Geschicke ganz Europas im 18. Jahrhundert unsichtbar gelenkt hat, oder als prominentes Mitglied einer schwedischen politischen Partei.

Schließlich werde ich Beispiele für die Auseinandersetzung, oder besser: Nicht-Auseinandersetzung, Schuchards mit aktuellen Thesen der Erforschung speziell zu Swedenborg, zu seinem Kontext und zur neueren Esoterikforschung bringen. Es wird auch darüber zu reden sein, welche Konsequenzen die Geheimdienstagende für die Interpretation der angeblichen göttlichen Offenbarung, der Visionen, der Werke und der kolportierten nekromantisch-telepathischen Fähigkeiten des nach dem spöttischen und zugleich würdigenden Urteil Herders „größeste[n] Geisterseher[s] des achtzehnten Jahrhunderts" hatten (Herder 1802).

1. Das Buch basiert wie jeder Thriller auf einer Verschwörungslegende. Sie beruht auf der Ende der 1920er Jahre aufgestellten These, Swedenborgs Reichtum sei nicht etwa durch seine Einkünfte und sein familiäres Erbe zustande gekommen, er habe zusätzlich eine Jahrespension von 5.000 Reichstalern erhalten, die Louis XV. jahrzehntelang an ihn gezahlt und durch die er seine Reisen und die Publikationen seiner theologischen Schriften finanziert habe. Diese These,[4] der in der Forschung auch deshalb kaum ein Autor gefolgt ist, weil sie auf quellenmäßig ganz unzureichend gestützten Vermutungen beruht, ist Ausgangsort der Verschwörungstheorie. Für Schuchard waren es vor allem—und kollektiv—Swedenborgs Biographen, die alle geheimen, diplomatischen und freimaurerischen Aspekte aus Swedenborgs Lebenslauf verdeckt und getilgt haben (1).[5]

Es ist in der Swedenborgforschung bekannt, dass aus den Tagebuchaufzeichnungen posthum Stücke entfernt worden sind, wobei sich nicht eindeutig klären lässt, ob Swedenborg das selbst getan hat oder ob es an den sehr offenen und teilweise durchaus drastischen Schilderung seiner sexuellen Phantasien lag, die unter seinen Anhängern als anrüchig galten. In jede dieser herausgerissenen Seiten projiziert Schuchard nun verschwundene Zeugnisse geheimdienstlicher Aktivitäten. Ihr Vorgehen kann sich ja nur auf das *Fehlen* solcher Belege stützen, *weil* es sich um eine geheimdienstliche Angelegenheit handelt. Auf Seite 12 wird behauptet, es existiere substantielles Beweismaterial (*evidence*) für Swedenborgs geheimdienstliche Rolle—das an keiner Stelle in Gestalt von Beweisen ans Licht gebracht wird—aber es gebe eben ein Problem wegen der vernichteten und zerstörten Dokumente. Die Dokumente, die Swedenborgs politische Verwicklungen

hätten beweisen können, seien nie wieder aufgetaucht und vermutlich vorsätzlich (*deliberately*) zerstört worden (86). Und diese Verschwörung bleibt nicht bei Swedenborg stehen: schließlich habe auch sein langjähriger Mit-Netzwerker Erik Benzelius vor seinem Tod alles Wichtige verbrannt (86) und ein anderer führender Politiker (Tessin) habe unglücklicherweise (*unfortunately*) vor seinem Tod die Entfernung des gesamten politischen Materials aus seinen Tagebüchern veranlasst (553). Das ist möglich, wendet der Rezensent ein, aber warum fehlt ausgerechnet an dieser Stelle ein Quellenbeleg dafür, dass Tessin dies überhaupt befohlen hat? Schließlich habe einer der letzten Bekannten Swedenborgs in London viel Korrespondenz Swedenborgs vernichtet, darunter den Briefwechsel mit Rousseau und Voltaire (740), über den nichts weiter als spekuliert werden kann. Dann hätten die Erben den Nachlass noch einmal gereinigt (740, auch 428). Hier wären die Beweise wohl vorhanden gewesen, aber, so ist Rezensent zu folgern gezwungen: Offenbar müssen alle Personen, die mit Swedenborg je zu tun hatten, alle echten Beweise (*evidence*) vernichtet haben.

Das aber ist positiv für die Autorin: Durch die vielfältigen Aktenvernichtungen ist ja erst der große Raum entstanden, der phantasmatisch und mit Spekulationen gefüllt werden kann. Wenn die Briefe Swedenborgs keine bedeutsamen Informationen über seine geheimen politischen Verwicklungen enthalten, entscheidet Schuchard, dass Swedenborg vor der englischen Postüberwachung gewarnt worden sein müsse (38);[6] wenn Swedenborg seinen Namen nicht unter Briefe setzte, wird das als Zeichen von Konspiration gewertet (47). Weil sie die Effizienz der britischen Postüberwachung kannten, praktizierten die schwedischen Verschwörer und ihre Verbündeten ein System nicht nachweisbarer und nicht schriftlicher Kommunikation, und zwar mit allen „‚masonischen'" Tricks der Verschwiegenheit, mit Fingerzeichen, Körperhaltung, Symbolsprache, verschwindender Tinte (124). Man ist geneigt zu sagen: Ja. Aber verschwindende Tinte ist eben verschwunden.

Die Geheimnisse wurden so geheim transportiert, dass sie bis heute niemand nachweisen kann, und auch für Schuchard gibt es keine andere Möglichkeit als Vermutungen über das anzustellen, was dort gestanden haben könnte, wo nichts überliefert worden ist. Aus einem verlorengegangen Brief (*now lost*) werden aber dennoch Details ‚zitiert' (79 f.); eine Korrespondenz sei nicht vorhanden, aber Swedenborg *hatte* (*had received*) von jemandem (*someone*) genaue Informationen über die politische Situation in Schweden und die geheimen diplomatischen Initiativen (87). Angesichts der Dichtheit des Spionage-Netzwerkes, in das Swedenborg und seine Freunde verwickelt waren, sei es doch klar, dass Swedenborg fast völlig (*almost complete*) über seine politischen Aktivitäten schwieg (80). Die Non-Existenz von Quellen (1745/1746) sei nicht überraschend, schließlich sei der Grad des Erfolgs einer Unternehmung vom Grad der Geheimhaltung abhängig gewesen (402). Trotz des vorausgesetzten Fehlens von Dokumenten wird dennoch behauptet, er sei nach Holland geschickt worden, um sich dort militärische Kenntnisse anzueignen (8 f.), und er sei in die schwedisch-jakobitisch-französischen Invasionspläne eingeweiht gewesen (11). Als er England verließ, verloren (*lost*: Indikativ) die Hats einen wertvollen Agenten (463)—dieser „Wert" ist aber lediglich mit Spekulationen begründet worden. Swedenborg habe eng mit Karls XII. Offizieren zusammen gearbeitet, unglücklicherweise (*unfortunately*) seien aber die Briefe verschwunden (129). Etc., etc. So ist das bei Geheimagenten!

2. Bestechend ist die mehrschichtige „Beweisführung" dafür, dass Swedenborg Freimaurer war, und zwar sowohl des schwedisch-französischen Jakobitismus als auch als Mitglied der herrnhutischen Judenmission und Agent der rosenkreuzerischen Freimaurerei (428). Dass Swedenborg Mitglied eine Loge war, ist 1869 von einem Freimaurer und swedenborgischen Mitglied der Neuen Kirche L. P. Regnell und dann von Freimaurern behauptet worden, die den Swedenborgischen Ritus praktizierten. Da Schuchard weiß (54 f.), dass es keinen Beleg für eine Initiation gibt, sieht sie sich genötigt, die Glaubwürdigkeit Regnells zu beweisen. Und das tut sie in einer Anmerkung mit Hilfe der Autorität des heute (2013) lebenden Pfarrers der Swedenborgianer in Stockholm, Olle Hjern. Hjern habe bestätigt, dass Regnell ein „reliable historian" gewesen sei (5). Dies erscheint Schuchard so gravierend, dass sie es an anderer Stelle gleich noch einmal bringt (53 f.).

Ungeachtet der Frage, woher Hjern diese Beurteilungskompetenz erlangt haben könnte—welche ‚Beweise' bringt die Autorin noch? Eine Auswahl: 1. Swedenborg war ein Freund der Tessin-Familie, in der es bewiesenermaßen viele Freimaurer gab (7). 2. Mehr als ein Viertel des *Collegium Curiosum* um Benzelius seien Freimaurer gewesen (53). 3. Nach einem Bericht von 1787, den Regnell als Quelle benutzt hat, sollen der König und sein Bruder Swedenborgs Mitgliedschaft bestätigt haben (53). 4. Schon in seiner Londoner Studienzeit sei Swedenborg von Legionen von Freimaurern umgeben gewesen (57–59), so dass letztlich der These seiner bereits 1710 geschehenen Initiation und seiner Wiederaufnahme in Lund 1716 gefolgt wird—ohne Beleg, aber mit diesem Eingeständnis: „Unglücklicherweise gibt es aber viel Verwirrung über Swedenborgs angebliche masonische Aktivitäten zu dieser Zeit" (110). „Unfortunately" ist ein häufig anzutreffendes Attribut über den Mangel an Quellen, es bringt, so könnte man sagen, das Buch in einem Wort auf den Punkt. 5. Swedenborg bat Benzelius 1717 brieflich um ein neues Paar Samthandschuhe. Weiße Samthandschuhe erhielt man traditionell beim Logeneintritt (114). 6. Swedenborg könnte sich unter den „verstreuten Brüdern" befunden haben, von denen ein führender Maurer berichtet (194). 7. Im *Diarium spirituale* notiert Swedenborg, er habe geträumt, in einer Gemeinschaft von Architekten und Baumeistern gewesen zu sein (442). Die sieben Grade der Wiedergeburt in den *Arcana coelestia*, die sich wahrscheinlich auf Augustins sieben aufsteigende Grade der Seele beziehen,[7] deutet Schuchard auf das maurerisches Gradsystem (457). 8. Der Verleger Swedenborgs war Herrnhuter, Freimaurer und wurde als Jakobit verdächtigt (462, sowie 711). 9. Der Göteborger Anhänger Swedenborgs G. Beyer war „vielleicht" ein Maurer, weil sein Schwager und sein Cousin Logenmitglieder waren (606). 10. Der englische Swedenborg-Übersetzer Th. Hartley war Maurer (681). Swedenborgs Stockholmer Nachbar Robsahm war ein „Masonic Hat" (701). 11. Swedenborg benutzte in einem Brief an den König ein Vokabular, das im schwedischen Ritus üblich war, zum Beispiel „Hoherpriester"[8] (705). Der entscheidende Hinweis aber ist für Schuchard 12. ein Traum, den Swedenborg in seinem erst im 19. Jahrhundert veröffentlichten und zur Publikation gar nicht vorgesehenen *Drömmar* notiert hat: Swedenborg schrieb nach dem Erwachen, ihm habe (1744) geträumt, er sei als Jakobit inauguriert worden. Dies beschreibe „fast sicher" (*almost certainly*)[9] Swedenborgs Initiation (350). Unabhängig davon, dass hier nicht der Raum ist, über Traumtheorien und deren vermeintlich „fast sicheren" Realitätsgehalt zu urteilen, muss man fragen: Warum haben die Erben und Anhänger Swedenborgs,

die dessen Nachlass, Tagebücher, Korrespondenz posthum gründlich gereinigt haben sollen und gerade aus dem *Drömmar* viele Seiten herausgerissen haben, ausgerechnet diese entscheidende Stelle, den „fast sicheren" Beweis übersehen?

Das Problem, dass es gerade keinen Beleg dafür gibt, dass Swedenborg überhaupt einer freimaurerischen Loge angehört hat, die auch Bestandteil eines geheimdienstlichen Netzwerkes war, wird dadurch „gelöst", dass einer riesigen Anzahl von Personen, die Swedenborg kannte oder gekannt haben soll, diese Mitgliedschaft bescheinigt wird. Vor allem aber wird dieser transeuropäische Kreis aus Politikern, Gelehrten und Bankiers ganz assoziativ zusammengestellt, nämlich aus Personen, die a) Swedenborg entweder erwähnt oder kennt oder die b) schlichtweg in derselben Zeit am selben Ort wie er waren, in Den Haag, London, Amsterdam, Lyon oder anderswo. Lediglich diese Synchronizität ist an vielen Stellen die Untermauerung für Schuchards These, dass Swedenborg ein Maurer gewesen sein muss: Anlässlich der Beschreibung eines Parisaufenthalts werden schlichtweg alle Personen aufgelistet, die Swedenborg hier getroffen haben *könnte* (*may*), während zugleich—ohne Beleg—behauptet wird, der junge Swedenborg habe eine Mission gehabt. Aber klar: Über Swedenborg—hier in Paris—herrschte ein völliges Schweigen (*complete silence*), das nach der unbegründeten und natürlich völlig unbegründbaren Behauptung Beswicks (1870) beabsichtigt (*deliberate*) war und von Swedenborg auch „in späteren Perioden intensiver masonischer Aktivität wiederholt" worden sei (249). Eine andere Stelle: Swedenborg habe sich nur als Student ausgegeben, aber geheime Instruktionen zur Unterstützung einer jakobitischen Offensive besessen (79, 228 f.)—ohne weiteren Beleg. Dass Swedenborg bei bestimmten Banken Geld abhob, wird als Beweis dafür gewertet, dass er mit geheimen Missionen der königstreuen Hat-Partei, die mit Jakobiten und Franzosen unter einer Decke steckte, zu tun hatte, die ebenfalls über diese Banken abgewickelt wurden. Beleg? Fehlanzeige (siehe auch 11, 154, 221 f., 232, 260 f. 502, 542 f., 643, passim). Aber es gibt natürlich eine für den Thriller-Leser einleuchtende Erklärung: „Swedenborgs Rolle in solchen [streng geheimen, FS] Transaktionen wurde so geheim gehalten, dass sein Name nicht auf den Listen erscheint [...]" (336). So ist das bei Geheimagenten und geheimen Finanztransfers! Auch einen geheimen Geldkoffer für die schwedisch-jakobitische Verschwörung soll er besessen haben (167).

Dass er sich in Leiden (157) und später in Venedig (264) aufhielt, als die Stadt gerade voller jakobitisch-freimaurerischer Flüchtlinge war, wird als weiterer Hinweis auf seine geheime jakobitische Mission angeführt (vgl. auch 666 f., 674–677). Belege? Aufzeichnungen kann man bei einem Geheimagenten nicht erwarten. Erlaubt ist aber Schuchards Bemerkung, dass er nach seinem Venedig-Aufenthalt zwei Wochen „traveling and sight-seeing" machte (265), fehlende Tagebuchaufzeichnungen gestatten ja schließlich auch einmal einen Urlaub von der Spionage. Und am Ende seines Lebens (1771) soll nach einer alten Behauptung des genannten swedenborgischen Freimaurers Beswick der greise Swedenborg noch an einem speziellen Logentreffen in Berlin beteiligt gewesen sein. Obwohl das nicht bewiesen werden kann, fährt Schuchard fort: Wenn er in Berlin war, dann hätte er auch von Plänen für die Gründung einer schwedischen Tochterloge in Sankt Petersburg erfahren (715). Klar!

Und Casanova darf nicht fehlen; seine Erinnerungen und seine „kabbalistische finanzielle Expertise" in geheimen Geldgeschäften werden umfangreich

mit einbezogen (262, 530 f., 534), sofern Swedenborg von seinem Auftraggeber darüber hätte informiert werden können (*may*, 533). Schriftliche Zeugnisse über einen persönlichen politischen Kontakt zu Swedenborg? Nicht vorhanden.

3. Bei diesen möglichen Treffen und Korrespondenzen mit Personen, die Swedenborg mehr oder weniger kannte, mag es sich um erlaubte Spekulationen handeln—vergessen wir nicht die Le-Carré-Agende der Einleitung—schließlich sind diese Darstellungen immer einmal im Konjunktiv abgefasst. Es verwundert dann aber doch, dass bei der ungeheuren Fülle von Namen und Netzen, die alle in geheime politische, sexuelle Affären verwickelt waren, plötzlich zugegeben wird, Swedenborg sei möglicherweise (*possibly*, 98) in ein solches Netzwerk eingeweiht gewesen. Wozu solch relativierende Konjunktive, könnte man fragen? Der von der Autorin zu Beginn gefasste Entschluss, eine streng historische Biographie zu schreiben, scheint dadurch aufgegeben worden zu sein. Aber es gruppieren sich um eine solch seltene Zurückhaltung so zahlreiche Indikative, dass diese Hoffnung schnell wieder aufgegeben werden muss.

Ein wesentliches Problem wird nicht thematisiert: dass sich Leute getroffen oder gekannt haben, dass jemand ein bestimmtes Buch besessen oder gekauft hat, sagt noch lange nichts über die Art und Weise der Rezeption aus. Als sichere Tatsache, aber ohne Quelle, wird zum Beispiel ausgegeben, dass der alte Swedenborg plante, sich bei einem Aufenthalt in Hamburg mit einem „geheimen rosenkreuzerischen Netzwerk" zu verbinden (709). Ein Dokument von 1785, wie viele Legenden über Swedenborg erst posthum in die Welt gesetzt, hier 13 Jahre nach seinem Tod, dient als Beleg, dass er dort den Kabbalisten und Hermetiker Johann Daniel Müller getroffen und mit ihm in größter Vertrautheit gelebt habe. Das mag stimmen oder nicht. Über Müller (Elias Artista) ist geforscht worden,[10] und es ist bekannt, dass er wie Friedrich Christoph Oetinger zu den differenzierten Kritikern Swedenborgs gehört hat. Aber wie kann man ohne weitere Quellen oder wenigstens Hinweise von einem Zusammentreffen zweier Personen, wenn es denn stattgefunden hat, folgern, dass diese beiden Personen auch ganz bestimmte Interessen, Neigungen, Kenntnisse geteilt oder sich auch nur gegenseitig darüber informiert hätten? Wenn sich zwei Könige, zwei Kanzler oder zwei Philosophen in einer Stadt treffen, ist damit doch noch lange nichts über eine Allianz ausgesagt. In vielen anderen Fällen legt Schuchard zudem, wie oben erwähnt, eine gegenseitige Einflussnahme nur aufgrund der Synchronizität nahe, *ohne* dass ein Zusammentreffen bekannt wäre.

4. Schließlich gibt es auch noch den Bereich der Wirtschaftsspionage, der sich natürlich auch nicht durch Quellen belegen lässt. Das hindert die Autorin aber nicht daran, ungerührt einen diplomatischen und technologischen Doppelzweck seiner Mission zu behaupten (159), und zwar nur, weil Swedenborg nachweislich an relevanten Orten war: Im Harz habe er Bergwerksgeheimnisse ausgespäht (159), in Meißen habe er vielleicht in der Porzellanmanufaktur Industriespionage betrieben (200, 224 f., 684). Dass er selbst König Frederik I. gegenüber vorgab, er betreibe mineralogische Forschungen, sei lediglich eine Tarnung für seine „komplexere Agenda" und seine politisch-militärische Geheimdienstarbeit gewesen (200). Nicht geringen Raum verwendet Schuchard für die nicht abgesicherte Behauptung, er habe für die schwedische East India Company gearbeitet (221, 224, 357). Auch Swedenborgs frühe technische und bergwerkliche Vorhaben, die er zusammen mit Christopher Polhem verfolgte, werden selbstverständlich von

Schuchard in Verbindung mit geheimdienstlichen Aktionen gebracht (120–122). Und sogar Swedenborgs gescheitertem Versuch, den Längengrad mit Hilfe des Mondes zu berechnen, liegt für Schuchard ein geheimdienstlich-freimaurerisches Motiv (*longitude espionage*) zugrunde (617 f.).[11] Auch die Tatsache, dass Swedenborg wissenschaftliche Traktate anonym veröffentlicht hat, wird in Verbindung mit seiner geheimen politischen Mission gebracht (154).[12]

Schließlich führt das Fehlen von Quellen über Swedenborgs Reisetätigkeit in einem Zeitraum von etwa 15 Monaten Schuchard zu Spekulationen über eine längere Haft Swedenborgs im Zusammenhang mit einem (möglichen, aber natürlich nicht bewiesenen) Verrat an die französische Geheimpolizei (250 f.). Spione leben gefährlich!

5. Zu den schon in den ersten Aufsätzen vertretenen zentralen Thesen Schuchards gehört die Behauptung, Swedenborg sei in herrnhutischen und kabbalistischen Geheimgesellschaften in einem Gemisch aus einer sexuell-orgiastischen Praxis und kontemplativen Atemübungen zu seiner spirituellen Erfahrung gelangt. Womöglich hat sie wegen der scharfen Kritik an gänzlich fehlenden Beweisen für diese Erklärung von Swedenborgs Offenbarungsvisionen darauf verzichtet, diese Geschichte in ihrem *opus magnum* noch einmal *en detail* zu erzählen. Der Rahmen jedoch bleibt: In rosenkreuzerischen Netzwerken habe Swedenborg kabbalistische Meditations-Techniken erlernt, um die Zustände des Hellsehens und ekstatische Visionen zu erreichen und die Fähigkeit der Geisterkommunikation zu erlangen (xii). Diese Techniken, kabbalistische Numerologie und hermeneutische Allegorese habe er sich angeeignet, um mit ihrer Hilfe Gedankenlesen oder physiognomische Analysen vornehmen zu können, also geradezu „‚moderne' Werkzeuge" der Spionage (8, Hervorhebung bei Schuchard). Schon als Student habe Swedenborg in Oxford hebräische und kabbalistische Schriften studiert (71) und später habe er seine Fähigkeiten in Zukunftsweissagung, Telepathie, Physiognomie, Simulation und Dissimulation weiter vervollkommnet, um ein Agent der schwedischen Hat-Partei und der Freimaurer zu werden (328).

Zwar wird an keiner einzigen Stelle für dieses Agententraining irgendein akzeptabler Beleg erbracht, die entscheidende These läuft jedoch darauf hinaus, Swedenborgs gesamte Hermeneutik einschließlich seiner Theologie als ein verschlüsseltes literarisches Unternehmen darzustellen, mit dessen Hilfe geheime Botschaften nicht einfach nur aus der Geisterwelt, sondern aus den politischen Affären des europäischen Untergrunds chiffriert transportiert worden sind. Die Quellenbasis auch für diese Behauptung, zumal sie in den anderen Studien Schuchards mit sexueller Pikanterie gespickt ist, ist weniger als nur schmal.

6. Die Folgerungen, die daraus gezogen werden, sind hingegen weitreichend und geradezu sensationell: Swedenborgs Geister sind gewissermaßen verschlüsselte Spione. Ich komme noch darauf zurück, zuvor soll aber auf die jüdisch-kabbalistische Agenda eingegangen werden, die für Schuchard ein entscheidender Mosaikstein des Gesamtkonzepts ist. Aber auch dieser Teil ihres Puzzles besteht letztlich nur aus Indizien, die nicht quellengestützt sind, es sei denn, so Schuchard, man prüfte die Rolle des genannten Erik Benzelius genauer. Denn dann würden angeblich viele der vagen und konfusen Behauptungen über Swedenborgs frühe kabbalistische, masonische und rosenkreuzerische Neigungen endlich plausibel (17). Benzelius habe an den Philosemitismus Karls XII. angeknüpft (117), der aber

eigentlich nur Sachkenntnis, Geld und diplomatische Verbindungen von Juden für seine politischen Zwecke nutzen wollte (116). Da aber auch über Benzelius keine klaren Beweise für Swedenborgs verborgenen Philosemitismus und auch nicht für seine kabbalistisch-sexuelle Prägung erbracht werden können, muss es bei der von Schuchard beklagten Vagheit und bei dem genannten Verfahren bleiben, das ich als „historiographische Synchronizität" bezeichnen möchte.

Als Swedenborg beispielsweise in Prag war, gab es dort einen berühmten sabbatanischen und kabbalistischen Rabbi namens Eibeschütz, dessen Lehren für Swedenborgs spätere Werke relevant geworden sein „könnten" (203). Ob er ihn getroffen *hat*, ist nicht bekannt, diese Unbekanntheit dient aber als Argument, dass Swedenborgs Lehre überhaupt kabbalistisch geprägt ist. Auch wird behauptet, Swedenborg habe schon in Prag mystische Meditationen vorgenommen; Beleg ist eine Stelle aus einer Jahre später verfassten unveröffentlichten Schrift, die gar nicht den Anspruch eines persönlichen Berichts erhebt (203 f.). Wie beim tibetanischen und hinduistischen Yoga, so Schuchard an anderer Stelle, habe Swedenborg die Kombination aus Fasten, Atemübungen und Konzentration praktiziert (308 f.), und da er das nicht von den Hindus gelernt haben kann, muss er es für Schuchard von kabbalistischen Juden erfahren haben—vielleicht über zwei Juden, die ihn nach einer Notiz von 1786 (14 Jahre nach seinem Tod) einmal besucht haben (366 f.)? Die Herkunft der ominösen, nicht einmal bekannten Meditations- und Kontemplationspraxis Swedenborgs muss nach Schuchards Entscheidung auf jeden Fall jüdisch-kabbalistisch sein, jeder möglichen Verbindung wird nachgegangen (24, 309 passim) und es wird munter spekuliert, damit das Ergebnis plausibel gemacht werden kann, wie sie es oben im Falle Benzelius' ausgedrückt hat. Auch Stellen aus dem sogenannten *Diarium spirituale*, in dem Swedenborg jahrelang Visionen notiert hat, werden als verschlüsselte Botschaften und zur Untermauerung von Beweisen für tatsächliche Begebenheiten und Zusammenhänge hier und an vielen anderen Stellen herangezogen (vgl. 240, 315, 343, 358, 408, 410 f., 413, 432, 437, 448, 493, 495, 527, 534, 587).

7. Gegenüber den gelehrten, rein phänomenologischen Vergleichen, die Bernd Roling zwischen kabbalistischen Denkformen und Swedenborgs Lehre vorgelegt hat (Roling 2006; Roling 2008), nicht ohne selbst zuweilen die Grenze zu historischen Tatsachenbehauptungen zu überschreiten, interessiert sich Schuchard kaum für theologische oder philosophische Tiefenanalysen. Sie nutzt aber Rolings Arbeiten und die problematischen, teilweise seit Jahren unveröffentlichten und nur immer wieder angekündigten Studien von Susanna Åkermann-Hjern („forthcoming", 775) zur wenigstens referentiellen Unterstützung ihrer Theorie vom sexuellen Kabbalismus Swedenborgs, den sie bis zu der Behauptung führt, der alte Swedenborg habe Studenten mit dem Versprechen rekrutieren wollen, sie in die Geheimnisse der ehelichen Liebe, mit anderen Worten: in die Sexualität einzuführen. Swedenborg scheine auch die muslimische Lehre von den sexuellen Genüssen mit entzückenden Jungfrauen geteilt zu haben, obwohl er die Polygamie selbst ablehnte. Denn er selbst habe doch eine übernatürliche sexuelle Potenz im Jenseits versprochen und sei darin über Mohammed hinausgegangen (632). Man kann, meint der Rezensent, zwar vermuten, der Single Swedenborg habe mit seiner himmlischen Ehe und der Vorstellung auch himmlischer Sexualität seine eigene sexuelle Einsamkeit in den Himmel verpflanzt. Man sollte aber nicht übersehen, dass es sich für Swedenborg nicht

um körperliche, sondern um eine geistige Analogie zur Sexualität handelt, um einen geistigen Genuss also. Es geht in Swedenborgs Himmel nicht um eine ideale Promiskuität und nicht um eine permanente Deflorationspraxis!

8. Aber noch eine andere Spur verfolgt Schuchard beharrlich und mit ebensowenig Belegen: in London habe Swedenborg bei den Herrnhutern (*Moravians*) seine kabbalistischen, atemtechnischen und sexuell-theosophischen Erfahrungen aufgefrischt und vertieft, sich dann aber von der Promiskuität der *Moravians* losgesagt und mit Hilfe seines irdischen oder himmlischen Mentors nächtliche Pollutionen und verführerische Sirenen sowie seinen eigenen meditativen Prozess diszipliniert (450). Auch für den Zusammenhang Sexualität-Herrnhuter-kabbalistisches Judentum finden sich keine Beweise, sondern nur willkürlich aufgestellte Vermutungen (vgl. 227, 367, 521–23, 527, 533). Auf jeden Fall sei Swedenborgs Vorliebe für die eheliche Liebe und die himmlische Sexualität eine Frucht seiner Prägung durch die Herrnhuter Brüdergemeine und kabbalistische Juden, nur deshalb sei er in den Jahren während seiner legendären biographischen Wende zum Geisterseher überhaupt in London gewesen (438, 443). Dort war er in die „Moravian and Jewish Underworld" abgetaucht (366). Klar, dass man über den Untergrund nichts Genaues weiß.

Dass der „Baal Schem" von London, Rabbi Samuel Jacob Falk, in derselben Straße wie Swedenborg gewohnt hat, ist in der Tat erstaunlich. Noch erstaunlicher aber ist ein nur in als Abschrift (!) vorhandenes Dokument aus der Feder Falks (von 1779!), auf dem Schuchard einen gewissen „Emanuel" entziffern ließ, der Diener des Königs von Frankreich gewesen sei (447). Das ist für die Autorin klarer (*certainly*) Beweis, dass der Baal Schem Falk und Swedenborg sich gekannt haben, dass Swedenborg Agent der jakobitisch-französisch-masonischen Verschwörung war, die Pension des Königs erhielt und überhaupt Bestandteil des behaupteten Agentennetzwerkes war! Illustriert wird dies wiederum mit einer Geistervision, in die Schuchard den Baal Schem hineindeutet (448)—natürlich ohne dass dieser dort erwähnt wird.

An einer anderen Stelle wird behauptet, es fehle ausgerechnet das Stück auf einem Dokument, auf dem Swedenborg vermerkt hatte, man habe ihm 30.000 Reichstaler geschuldet (579). Wie bedauerlich! Aber was wäre, wenn dort etwas ganz anderes gestanden hätte und wenn das massive Fehlen von Quellen von Swedenborgs Spionage ganz andere Gründe hätte als vorsätzliches Schweigen oder gezielte Aktentvernichtungen, bei der der ostdeutsche Rezensent sich sehr wohl Assoziationen an die Stasi-Akten-Vernichtungen ab Dezember 1989 nicht erwehren kann. Nur hinkt dieser Vergleich. Während aktuell viele verschwundene Akten der Geheimpolizei der DDR computergestützt aus zerrissenen Fetzen wiederhergestellt werden, ist das Material, das Swedenborg „belasten" könnte, ein für alle Mal: non-existent.

9. Eine weitere phantastische Leistung des Buches besteht darin, Swedenborgs *scientia correspondentiarum* auf Swedenborg selbst anzuwenden. So wie Swedenborg hinter jedem Buchstaben der Heiligen Schrift eine andere, innere Bedeutung, einen *sensus internus* erkennen will, mit dem er den gigantischen allegorischen Kommentar zu *Genesis* und *Exodus* der achtbändigen *Arcana coelestia* verfasst hat, so legt Schuchard mit der Korrespondenzlehre Swedenborg aus. Hinter seinen Schriften will sie ebenfalls einen *sensus internus* entdecken, der nun aber nicht für eine andere höhere, sei es himmlische oder geistliche Realität

steht—was Swedenborg ja behauptet—sondern Swedenborgs geheime politische Aktivitäten für die Hats, für Jakobiner, Rosenkreuzer, kabbalistische Bankiers oder für den französischen Geheimdienst chiffriert. Mit anderen Worten: Swedenborgs Geheimtätigkeit und Geheimsprache waren so geheim, dass er sogar im visionären Traum und in den—freilich zu Lebzeiten unpublizierten—Notizen über diese Träume Codes benutzte, die nach der Methode des *sensus mysticus* ausgelegt werden müssen: als Signaturen für die Geheimdiensttätigkeit, manchmal auch des Unbewussten.

Diese Hermeneutik wendet Schuchard schon in der schriftlichen Korrespondenz Swedenborgs an. Klar ist, dass ein Geheimagent in seinen Briefen verschlüsselt redet. Wenn er einen schwedischen Politiker um die Unterstützung für seine wissenschaftlichen und mathematischen Projekte bittet, dann wird diese Stelle so ausgelegt, dass Swedenborg in die geheimen Aktivitäten dieses Mannes eingeweiht gewesen ist (97). In seinem eigenen Reisetagebuch habe er verschlüsselt beschrieben, dass er den *Grand Prior* der Templer getroffen habe (232). Für das *Drömmar*, in dem Swedenborg seine Träume und Visionen notiert, wird nicht erwähnt, dass Swedenborg diese Träume im Anschluss an ihr Notat selbst ausführlich interpretiert. Schuchard interpretiert diese Visionen lieber selbst und legt dabei, was wäre anderes zu erwarten, die Chiffren der angeblichen masonischen Verschwörungstheorie in sie hinein (345–355).

Aber auch offizielle Schriften Swedenborgs werden von Schuchard dekodiert. Seine frühen poetischen Texte seien etwa politische Geheim-Panegyrik, in der er seine Rolle als Spion verschlüsselt mitgeteilt habe (vgl. 10 f., 87 f., 92–96). Und alle Motive—Figuren, konkrete Personen, geographische Angaben, Tempel, Paläste etcetera—, die in den theologischen Schriften seit den *Arcana coelestia* vorkommen, werden konsequent als Hinweise auf Swedenborgs Masonismus gedeutet. Warum Swedenborg aber dieses gewaltige Verschlüsselungsprojekt in Form von extrem teuren Büchern überhaupt hätte vornehmen sollen, wenn es doch um den geheimen Transport verbotener Objekte eines international agierenden Secret Service ging—bleibt unerfragt und ungeklärt.

10. Einzugehen ist in diesem Zusammenhang auf Schuchards Deutung des Status der von Swedenborg behaupteten Offenbarung und der Visionen: Swedenborg habe unter dem Druck der politischen Verantwortlichkeiten (denen nur Spekulationen zugrunde liegen) seinen gesunden Menschenverstand bis zum Zusammenbruch getrieben; infolge der psychischen Transformation sei aus ihm ein sowohl himmlischer als auch ein irdischer Agent geworden (361). Nachts habe er durch seine kabbalistisch-masonischen Meditationen psycho-erotische Freuden genossen, tagsüber war er Naturwissenschaftler (364). Es ist nicht neu, dass Swedenborg in der Psychiatrie- und Psychologiegeschichte von Kant über Karl Japsers bis neuerdings zu Kontantin Rauer (2007; vgl. dazu Stengel 2011*a*: 636–639) Gegenstand posthumer Diagnosen gewesen ist. Solche Diagnosen haben ihre eigenen Probleme, weil sie es lediglich mit literarischen Krankheitsbildern zu tun haben und weil sie ferner die ihnen selbst zugrunde liegende Episteme und den Referenzrahmen möglicher Urteilsfindung in das 18. Jahrhundert zurückprojizieren. Das ist mit den zu Recht bescheidenen Mitteln einer historisch-kritischen Methode schlichtweg nicht zu leisten.[13]

Schuchard fügt den bisherigen psychiatrischen Befunden die Diagnose der temporären Schläfenlappen-Epilepsie hinzu (434), die mit Hypergraphie, Hyper-

religiosität und Hypersexualität verbunden gewesen sei (373). Es folgt der Verweis auf fragwürdige Vertreter einer heutigen (fragwürdigen) Neuro-Theologie, die eben diese Phänomene hirnorganisch begründen und als Beispiele neben Swedenborg Dostojewski, Kierkegaard, Mohammed [!] et al. betrachten (373 f.). Solche Diagnosen können nur aufgrund eines epistemologischen Vorverständnisses religiöser Phänomene insgesamt aufgestellt werden. Hierbei referiert Schuchard in bemerkenswerter Weise auf moderne Forschungsergebnisse, in denen Neurologen die Schläfenlappen-Epilepsie so beschreiben, dass sie manchmal eine Erfahrung nahe oder nach dem Tod (*near death or life after death*) produziere. Manche Patienten würden diese Erfahrungen sogar durch kognitive Techniken mit tiefer Konzentration und Meditation herbeiführen (581). Es lohnt sich, in den genannten Aufsätzen[14] nachzuschlagen, um sich davon zu überzeugen, dass die moderne Neurologie glücklicherweise doch nicht dazu übergegangen ist, Nah- und *Nach*todzustände (!) als Diagnosekriterien anzuwenden. Denn Schuchard hat schlichtweg übersehen, dass nicht die Neurologen, sondern die Epilepsie-Patienten berichten, sie hätten sich gefühlt *wie* nah beim Tod oder nach dem Tod.

Es dürfte weiterhin schwierig bleiben, solche subjektiven Erfahrungen dafür zu benutzen, um die nie diagnostizierte und auch nicht diagnostizierbare Epilepsie Swedenborgs als Erklärungsvehikel anzusehen. Diagnosen sind sicher möglich und nicht verboten, aber eben im Sinne einer Hypothese. Und wenn Moshe Idel angeführt wird, der erklärt, chassidische Kabbalisten des 18. Jahrhunderts hätten über Meditation von hebräischen Buchstaben beim Gebet Nahtod-Erfahrungen, ekstatische Momente und erotische Einheitserfahrungen gemacht (582), dann ist das ebenfalls nicht anders einzuordnen als Berichte über subjektive Erfahrungen, die alle Deutungsmöglichkeiten einer konsequent historisch-kritischen Untersuchung übersteigen.

Entscheidend für Schuchards Swedenborgbild scheint mir ihr Resümee zu sein: ob Swedenborgs Gaben und Begabungen, die physiognomischen Fähigkeiten, die Telepathie, das Hellsehen oder Visionen nun aus einem „geistigen Einfluss", aus kabbalistischer Meditation, aus einer temporalen Schläfenlappen-Epilepsie oder aus einer Kombination von allem stammte—diese Fähigkeiten hätten der spirituellen und politischen Agenda von Swedenborg und seinen Verbündeten gedient (752). Und genau diese Agenda ist das Produkt einer gewaltigen Spekulationsleistung.

11. Inwieweit nun ist das Buch mit der sonstigen Swedenborg-Forschung kompatibel, die schließlich keinesfalls nur von Swedenborgianern betrieben wird, die ja auch nicht alle Hagiographen sind? Von dem überwiegenden Teil dieser Forschung nennt Schuchard gar nichts; von den auch auf Englisch vorliegenden Standardwerken des prominenten Stockholmer Komparatisten Inge Jonsson (1961, in Englisch 2004; 1969; 1999) erwähnt sie die wichtigsten Arbeiten nicht einmal. Die hier und in noch neueren Arbeiten ausgeführten Ergebnisse akademischer Forschung, die sie nicht unbedingt kennen muss, stellen die Thesen Schuchards nachhaltig in Frage, ja ihre Thesen wären gar nicht möglich gewesen. Es mag daran liegen, dass Schuchards Agententhriller eher ein nur geringes Interesse für philosophie- und theologiegeschichtliche Fragestellungen mit sich führt. Schuchard weiß aber, was Swedenborg vor seiner visionären Wende zum „Geisterseher" alles gelesen und ausführlich exzerpiert hat:[15] die zeitgenössischen philosophischen Rationalisten von Descartes, Malebranche, Leib-

niz, Wolff über Augustin, und einige echte und pseudepigraphische klassische und patristische Schriften sowie naturphilosophische Fachliteratur. Die Konsequenzen der Exzerpte aus dieser Literatur sind deutlich dargelegt worden.[16] Schon in der O*economia regni animalis* sind Zitate aus der sogenannten *Theologie des Aristoteles*, aus John Lockes Spekulationen über die Engelssprachtheorien und Christian Wolff enthalten. Das fällt bei Schuchard zugunsten von kruden Spekulationen über nicht nachweisbares kabbalistisches und alchemistisches Material aber kurzerhand weg (vgl. 310 f., 322 f., 326). Ihre Kenntnis wird schlicht ausradiert. Für die von Schuchard behauptete geradezu extreme Rezeption alchemistischer, kabbalistischer und hermetischer Literatur gibt es hingegen gar keinen Beleg. Das mag nicht die Behauptung nach sich ziehen, er hätte solche Literatur auch nicht gekannt. Sicherlich ließe sich mit einiger Vorsicht auch so manche Erwägung anstellen, die aber immer wieder an die Grenzen der erheblichen Differenzen stoßen würde, die Swedenborgs Theologie und Naturphilosophie gegenüber der Kabbala, aber vor allem auch gegenüber der Alchemie und den magischen Künsten aufweist, die Schuchard Swedenborg ohne jeden Beleg unterstellt (134, 162, 309, 534). Während diese Unterstellungen aber durch „historiographische Synchronizität", durch den tatsächlichen oder angeblichen Besitz von Büchern im Vagen bleiben, wird die Literatur, die Swedenborg nachweislich gelesen hat, schlichtweg unter den Tisch fallen gelassen.[17] Dem unkundigen Leser muss sich so der Eindruck aufdrängen, dass es überhaupt keine Belege dafür gibt, was Swedenborg wirklich und nachweislich gelesen und handschriftlich abgeschrieben hat! Nur *indem* Schuchard dies ignoriert, kann sie ihre 760 Seiten überhaupt schreiben. Man muss ganz deutlich sagen, dass Schuchards womöglich nicht ganz zu Unrecht erhobener Vorwurf, Erben und Jünger Swedenborgs hätten dessen Schriften bereinigt—ich meine: aufgrund der sexuellen Anrüchigkeit—auf sie selbst zurückfällt: Sie kann die Archive, in denen das vielleicht nicht vollständige, aber doch vorhandene „Beweismaterial" (*evidence*) liegt, nicht verbrennen oder anderweitig zerstören, aber sie kann das Material ignorieren, um den Raum für ihre Le-Carré-Spekulationen zu öffnen und offen zu halten. Das ist nichts anders als ein Äquivalent der absichtlichen (*deliberate*) Verheimlichung und Zerstörung, die sie den angeblichen und tatsächlichen Hagiographen Swedenborgs unterstellt.

Damit wäre im Grunde alles zur Frage der Kompatibilität zwischen Schuchards *intelligencer* und dem Swedenborg der sonstigen Forschung gesagt. Dennoch noch einige Anmerkungen: die alchemiegeschichtlichen Studien von Hjalmar Fors (2007; 2008) werden zwar genannt. Aber dessen Forschungsergebnis, dass schon der junge Swedenborg mit Polhem zu den *Gegnern* alchemischer Praxen und Theorien in der Bergbaubehörde um Gustaf Bonde gehörte, wird nicht ausgewertet. Im Gegenteil wird immer wieder und ohne jeden Quellenbeleg behauptet oder nahegelegt, Swedenborg sei Anhänger der transmutatorischen Alchemie Bondes und Teil seines geheimen Netzwerks und seiner geheimen Missionen gewesen (vgl. 131, 152, 159, 174, 178 f., 216, 558). Hätte sie Fors gelesen, wäre eine wesentliche Stütze ihrer Gesamttheorie weggefallen. Aber auch die gesamte neuere, in den USA um Lawrence Principe und in Deutschland um Wilhelm Kühlmann und Joachim Telle gruppierte Alchemieforschung, ist Schuchard unbekannt. Das trifft auch auf die aktuelle Esoterik- und Kabbalaforschung sowie, soweit ich sehe, auf die blühende aktuelle Freimaurerforschung

zu. In der Frage der chinesischen Religion verzichtet sie gänzlich auf den Chinadiskurs des 18. Jahrhunderts, an dem der von Swedenborg als Autorität betrachtete und nachweislich gelesene Leibniz—und Christian Wolff—beteiligt waren (599). Anstelle von Leibniz und Wolff nennt sie A.M. Ramsay und die jakobitische Verschwörung—ohne Beleg. Das Werk ist aus dieser Perspektive schlichtweg nicht auf dem neuesten Stand.

Dass Swedenborg den kabbalistischen Pietisten Johann Wilhelm Petersen genannt hat, leitet Schuchard zu Spekulationen über eine Rezeption. Dass Swedenborg aber Petersens zentrale theosophisch-kabbalistische Idee, die *Apokatastasis panton* (Wiederbringung aller Dinge) gerade radikal ablehnt, wird nicht erwähnt (179) (Stengel 2011*a*: 6, 401).[18] Dies müsste auf alle Autoren und Bücher ausgedehnt werden, seien es hermetische oder alchemische Schriften. Auch wenn sie in Swedenborgs Auktionskatalog stehen, wird nicht das Geringste darüber ausgesagt, ob und, wenn ja, *wie* Swedenborg deren Inhalt rezipiert hat. Das ist eigentlich Proseminars-Wissen.

12. Ferner sind Schuchards Deutungen der telepathisch-nekromantischen Ereignisse zu nennen, die nach 1766 (Kant) in halb Europa diskutiert wurden. Für die vermeintliche synchrone Schau eines Stadtbrandes in Stockholm von Göteborg legt Schuchard, ohne sich festzulegen, folgende Lesart nahe: Swedenborg war in geheime Pläne von Brandanschlägen in Stockholm informiert, die Briten, Franzosen oder Preußen durchführen wollten. (540 f.) Er war also Mitwisser eines Terroranschlags, wäre die konsequente, leider aber wieder einmal nicht weiter belegbare Fortführung dieses Gedankens. Dass Swedenborg der Witwe des holländischen Botschafters die verlorene Quittung zeigen konnte: der verstorbene Botschafter selbst war bezahlter Spion der Briten und Preußen, der die Caps in der Diet unterstützt hat. Über einen weiteren russischen Diplomaten soll Swedenborg von dem Versteck gewusst haben. (563 f.) Für die Auslegung der nekromantisch erworbenen Mitteilung Swedenborgs an die Königin Luise Ulrike greift Schuchard auf die Lesart der Berlinischen Monatsschrift von 1783 zurück, wo es bereits um einen abgefangenen Brief gegangen war. (569) Davon abgesehen, dass diese Story von 1783 in eine Zeit fällt, als sich gerade in Deutschland die Legenden förmlich überschlugen, mit denen man die umstrittene Nekromantie, Telepathie oder Divinität Swedenborgs beweisen, ridikülisieren oder umdeuten wollte (vgl. dazu vorläufig Stengel 2011*b*): auch Schuchards Lesarten sind eben nur mögliche Deutungen.

13. Man wird am Ende sagen müssen, dass die schier endlose, in unglaublicher Fleißarbeit komponierte Namensliste, mit der Swedenborgs masonisch-jakobitisch-jüdisches Netzwerk „abgesichert" wird, angesichts des kaum zu überbietenden Grades an Spekulativität für weitere Forschungen kaum nützlich sein dürfte. Zwar erscheinen manche Spekulationen phantasievoll und interessant, sie werfen vereinzelte Schlaglichter auf das politische Leben im 18. Jahrhundert. Aber wie wollte man Tatsachenbehauptungen oder bestimmte Zusammenhänge aus einem Buch zitieren, das durch eine unglaubliche Leistung der Phantasie eine eigene Spionage-Narrative für das 18. Jahrhundert zustande gebracht hat? Es will dem Rezensenten nicht gelingen, aus dem John-Le-Carré-Modus abzuschalten. Man kann einen Polit-Thriller lesen oder sich im Kino anschauen. Aber ob man ihm glauben soll, wenn er schon im Vorwort einen anderen Romancier zum Motto erhebt und sich selbst damit als Fiktion deklariert?

Ganz zum Schluss fragt sich der Rezensent wohl, welches Motiv dieser Forschungsarbeit zugrunde gelegen hat? Ist es die manisch erscheinende Sucht, den umstrittenen „Offenbarer" und Geisterseher Swedenborg als Agenten zu entlarven? Oder ist es nur die Lust an der Story, die einige Freimaurer des späten 18. und dann des späten 19. Jahrhunderts in die Welt gesetzt haben? Vielleicht ist es aber noch etwas anderes: das Bedürfnis nach dem Mysterium in den Zeiten von Dan Browns *Da Vinci Code*. Denn ganz am Ende legt Schuchard selbst eine heiße Spur in die Jetzt-Zeit: William Butler Yeats, der 1923 den Literaturnobelpreis bekommen hat, sei bei seiner Relektüre Swedenborgs von dessen direkten Nachkommen und Schülern unterstützt worden. Auch habe Yeats gewusst, dass Gustav V. Großmeister der schwedischen Freimaurerei war. Und so, orakelt Schuchard, „fuhren die ‚alten' Traditionen des jakobitischen, jüdischen und masonischen Mystizismus fort, Theosophen, Wissenschaftler, Politiker und Künstler zu inspirieren" (759). Und Autoren.

ANMERKUNGEN

[1] Sie listet in der Bibliographie (782 f.) selbst 16 seither erschienene Titel zu den Themen Freimaurerei, Jakobitismus, sabbatanisches Judentum, Sexualität und Spiritualität, Herrnhuter, Cagliostro, William Blake und William Butler Yeats auf.

[2] Vor allem Snoek (2003: 23) hat betont, dass außer Schuchard in der Masonismusforschung niemand glaube, dass Swedenborg zu seinen Lebzeiten überhaupt irgendeine Verbindung zur Freimaurerei hatte. Vielmehr sei erst Ende des 18. Jahrhunderts, nach seinem Tod, durch den französischen Swedenborg-Übersetzer Antoine Joseph Pernety Swedenborg posthum zum Freimaurer gemacht worden. Entscheidend für die moderne Installation der Verbindung Swedenborgs mit einer speziell auf ihn auch zurückgehenden masonischen Tradition sei aber Samuel Beswick ([1870] 1997), der selbst ab 1870 für zwei Jahre Großmeister einer aus nur sechs Mitgliedern bestehenden Loge war, die dem Swedenborg-Ritus folgte.

[3] Er hat sich selbst jahrelang mit Swedenborg im 18. Jahrhundert befasst und seine Ergebnisse niedergelegt in der 2011 gedruckten Heidelberger Habilitationsschrift (Stengel 2011*a*).

[4] An manchen Stellen wird die These aber zur Hypothese: Swedenborg sei mittellos gewesen und habe vielleicht (*possibly*) eine französische Pension gehabt (78).

[5] Die Ankündigung, Swedenborgs Kontakte zu den Agenten Louis XV. mit neuen Dokumenten zu belegen, wird nirgendwo eingelöst. Es kommen lediglich zahlreiche andere Indizien hinzu, aber keine einzige klare Quelle. Demgegenüber wird vermutet, dass Swedenborg vielleicht schon vor 1715 auf die diplomatische Gehaltsliste gesetzt wurde, weil er kurz darauf seine ersten Gedichte veröffentlichte (95), die natürlich alle politische Geheim-Panegyrik waren.

[6] Dass Swedenborg zwei anonyme (im übrigen rein gelehrte) Traktate per Post schickte, obwohl er einen Besuch bereits plante, gilt Schuchard ebenfalls als Hinweis darauf, dass er die Sicherheit der Post testen wollte (155).

[7] Swedenborg hatte ausführliche Exzerpte aus Augustins *De quantitate animae* genau an diesen Punkten angefertigt (vgl. Stengel 2011*a*: 395).

[8] Dass dieses Wort eine zentrale christologische Bezeichnung aus dem Hebräerbrief ist, wird nicht erwähnt.

[9] An anderer Stelle wird das „almost" gestrichen. Auf Seite 271 „ist" er aufgenommen worden (*had been initiated*—Indikativ).

[10] Die Arbeiten von Reinhard Breymayer sind Schuchard bekannt.

[11] Vgl. dazu zum Beispiel zahlreiche Dokumente, die in der Zeitschrift *New Philosophy* abgedruckt sind und Stengel (2011*a*: 67–70).

[12] Dass anonyme Publikationen im 18. Jahrhundert eine weit verbreitete Praxis waren, wäre leicht in Erfahrung zu bringen gewesen, wenn Schuchard einmal das Register eines Gelehrtenjournals aufgeschlagen hätte.

[13] Vgl. dazu Stengel (2011*a*: 6, 5, sowie 35–46) wo ich die Möglichkeiten einer rein historischen Untersuchung von Quellen *über* das nicht nachprüfbare Ereignis einer Vision oder Offenbarung aufzutun versucht habe.

[14] Die Zitate aus den beiden Studien von Hansen/Brodtkorb und Trimble/Freeman aus der Zeitschrift *Epilepsy and Behavior* sind auffindbar, aber nicht an den genannten Stellen.

[15] Sie erwähnt ausdrücklich im Text und im Literaturverzeichnis Swedenborgs *A Philosopher's Notebook* (1931).

[16] Vgl. dazu die Studien von Stengel (2011*a*: 6, 334–452) und Jonsson (1961; 1969; 1999; 2004).

[17] Dieser Vorwurf ist den beiden genannten phänomenologischen Studien von Bernd Roling, die Schuchard kennt, ebenfalls zu machen: vorhandene Quellen werden ignoriert (Roling sind sie offenbar auch unbekannt), während phänomenologische Vergleiche als Spekulationsterrain dienen.

[18] Schuchard erweitert die von Swedenborg exzerpierten Autoren auch um solche, die nur mit Namen genannt werden (325).

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3. References

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Bäckman, L. & Hultkrantz, Å. (eds.) (1985). *Saami Pre-Christian Religion. Studies on the Oldest Traces of Religion among the Saamis* (Acta Universitatis Stockholmiensis. Stockholm Studies in Comparative Religion 25), Stockholm: Almqvist & Wiksell International.

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Unpublished dissertation

Smith, J. (1998). "Social Work Education in Scotland," diss., University of Glasgow.

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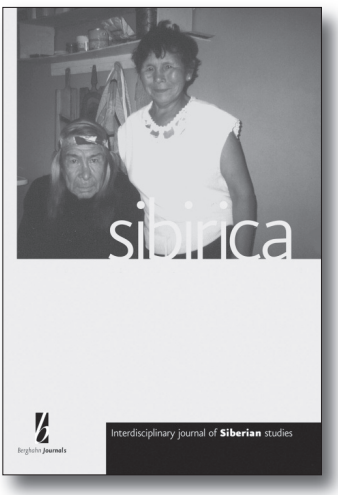

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❄ ❄ ❄ ❄ ❄ ❄ ❄

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