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Landscapes as documents: The relationship between traditional Sámi terminology and the concepts of document and documentation

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Abstract

Purpose – The purpose of this paper is to discuss the following questions: what is the origin of the concepts of documents and documentation? Are there a need for these concepts in every culture? Who gives the terms for their definitions, and what are the consequences of different terminology?

Design/methodology/approach – The authors use interdisciplinary methodology, combining document and information theory and Sámi linguistics. The aim of this paper is to discuss documentation from the perspective of the Sámi, with some examples from other indigenous groups.

Findings – Oral accounts, legends, traditional songs and traces in the landscape are seen as documents and documentation in Sámi and other indigenous cultures. The paper presents different theories in order to interpret and understand the specific information content in indigenous forms of documentation.

Practical implications – Indigenous ways of documentation have been accepted as valid proof of ownership or the right to extensive use of land resources. When no written records exist, oral testimonies and the landscape itself can be seen as documenting traditional use and has been accepted as evidence in high courts in Norway and Canada. The authors have also seen that the rich Sámi snow terminology is used as concepts in different fields of natural sciences.

Originality/value – The Sámi understanding of the concepts of document and documentation contributes to the traditional information and documentation disciplines by introducing ways of seeing natural phenomenon as fundamental forms of information.

Keywords Information science and documentation, Documentation, Documents, Document terminology, Document theory, Fundamental forms of information, Indigenous documentation, Sámi

Paper type Conceptual paper

Introduction – a Sámi way of documentation?

More than 100 years ago the Sámi writer Johan Turi wrote in the first printed book by a Sámi author, that the government did not understand the Sámi condition (Turi, 2012)[1]. He was not quite comfortable with the task. In Sámi, the first sentence in the book reads like this: *Mon lean okta sápmelaš, guhte lean bargan visot sámi bargguid ja mon dovddan visot sámi dili* (Turi, 1987, p. 11). In English this reads like: I am a Sámi who has done all sorts of Sámi work and I know all Sámi conditions. The central Sámi term here is *dovdat* or *dow'dat*[2]. *Dovdat* means to know, and also to perceive, sense, notice, feel, experience, understand, acknowledge (Nielsen, 1962, Vol. 1, p. 569). The word *dovdat* (or *dow'dat*) seems to be pointing to a prerequisite for traditional Sámi documentation: that one knows a phenomenon and its connection to

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land and people thoroughly. A strong form of documentation is achieved when you see and feel things with your own senses and can tell about them afterwards, as Turi manifests through his initial writing, "[…] I know all Sámi conditions" (Turi, 2012, p. 11). To take an object out of its natural setting in order to make it into a document is a weak form of documentation in traditional Sámi epistemology. They become dead objects with no connection to live processes. As is the case in all forms of documentation; experience, knowledge and a personal relation to the object is crucial if the documentation is to be regarded as truthful and reliable.

A second prerequisite in the Sámi understanding of documentation is that "objective facts" can change over time, because of the ever-changing fluid and dynamic nature of the nomadic lifestyle. In a life spent outdoors, landscape formations, the weather and the behaviour of the animals are "fundamental forms of information" for the reindeer herders (Bates, 2006). Turi (2012) was of the opinion that the Sámi could not make themselves fully understood in closed rooms and that they might be better understood if meetings with representations for the government took place up in the mountains, where the minds of the Sámi were free and there were no walls to block the view and their thoughts:

> When a Sámi becomes closed up in a room, then he does not understand much of anything, because he cannot put his nose to the wind. His thoughts don't flow because there are walls and his mind is closed in. And it is also not good at all for him to live in dense forest when the air is warm. But when a Sámi is on the high mountain, then he has quite a clear mind. And if there were a meeting place on some high mountain, then a Sámi could make his own affairs quite plain (p. 11).

When Turi wrote his book in the early 1900 he foresaw that traces in a landscape, oral stories and yoik[3] (traditional Sámi way of chanting) would not be "read" as documents in the modern society. Landscapes, stories and images had to be represented and documented in durable documents, like a book, in order to survive in the future (Scott, 1990). Turi (2012) writes:

> I have been thinking that it would be best if there were a book in which everything was written about Sámi life and conditions, so that people wouldn't have to ask how Sámi conditions are, and so that people wouldn't misconstrue things […] (p. 11).

Turi wrote his famous book together with the Danish artist and ethnologist Emilie Demant (later Demant-Hatt), and got it published in 1910. The book includes drawings by Turi inspired by the expressionistic style of the time, intended to clarify passages in the text (Gaski, in Turi, 2012, p. 8). We can look at it as a multimodal document.

In the Sámi language there are concepts for documents that cover the common understanding of the word as "a piece of written, printed, or electronic matter that provides information or evidence or that serves as an official record" (Document, n.d.). We can also find more culture-specific concepts that mirror the Sámi way of thinking about documents. Konrad Nielsen, (as cited in Nesheim, 1955) the author behind the most comprehensive Sámi dictionary, wrote about the connection between the language and ways of thinking and living in a cultural group:

> It then becomes essential to show how that which, in the deepest sense of the word, is peculiar to the language of a people, is dependent upon the mental faculties of the people and how the people's living condition and its range of conceptions and way of thinking – influenced by living condition – have set their stamp on the language (p. 185).

In our paper we are asking how a document and documentation can be defined and understood in another language and another cultural context than the Anglo-American.

If we define "a document" as evidence or proof "in search of a fact" (Briet, 2006, pp. 9-10), can we find Sámi words that carry the same meaning as Briet's definition? When we translate Sámi concepts into English we must, as far as possible, preserve the Sámi criterion for the meaning of the word. We will try to give a detailed explanation of their meaning in English and put the terms in their proper cultural and societal context. To learn a language, then, is to learn to know a culture (Meløe, 1990, p. 75).

The modern concept of documentation

Niels W. Lund says about the origin of the concept of documentation:

> The word document and its Latin predecessor, *documentum*, was from the beginning in antiquity not only something to be held in hand or a piece of written evidence. It was primarily related to teaching and instruction. In 1214, the Latin form *documentum* is registered as meaning example, model, lecture, teaching and demonstration (2010, p. 740).

Lund states that in this use of the term an "oral lecture or instruction could […] have been the norm and prototype of a document" (p. 740). A speech, gestures, songs and hymns, not inscribed in any material base, but stored by mnemonics, counted as a document up to the seventeenth century.

This oral document tradition is mostly forgotten today. From the seventeenth century onward the development of the state bureaucracy in Europe set the scene for a legal conception of the document (Scott, 1990, p. 63). From now on a document is "a written object stating and proving transactions, agreements, and decisions made by citizens" and is linked to proof and authenticity, especially in legal matters (Lund, 2010, p. 741). It is a piece of writing that "tells" you something, informs you, and which can count as a proof or evidence (Levy, 2001):

> During the 18th century, an essential part of the development of the modern bourgeois society and especially its public sphere, was that the legitimacy of politics, economy, the court, and science became increasingly dependent on actors' ability to document their rights and claims (Lund, 2009, p. 3).

Lund (2009) concludes that the word document "can be merged into one central phenomenon in modern society: written and true knowledge" (p. 3). In science documentation became crucial as a proof of the empirical base for the researchers' argumentation. Historians at the universities regarded written documents in libraries and archives as "superior to observational and archaeological evidence, and to reminiscences and oral traditions" (Scott, 1990, p. 10). Around 1900 a bibliographic tradition of documentation developed based on the new empirical sciences (Farkas-Conn, 1990). In their definition of a document these documentalists included not only written texts, but also representations of objects and even objects themselves. Researchers in the natural sciences (geologists, zoologists, etc.) used "things" as data, written documents being only one form among others in the scientists laboratory (Buckland, 1991a). These "things" ought to be taken into the bibliographic field, according to the documentalists. The position taken by historians in defining documents as primarily written texts was from the early 1900 century challenged and attention was given to other documentary sources as well (Scott, 1990, p. 11). Suzanne Briet became a leading figure in what was then called documentation science and today is called information science (Buckland, 1995). In her seminal book *What is Documentation?* Briet (2006) extends the definition of documents from written texts to representation of objects and even objects themselves. She connects information explicitly with its material base and its use as evidence or proof (Briet, 2006,

pp. 9-10; Buckland, 1997, p. 805; Lund, 2009, pp. 6-7). Furthermore she defines a document as "a proof in search of a fact", and elaborates by saying that a document is "any concrete or symbolic indexical sign (indice), preserved or recorded towards the end of representing, of reconstituting, or of proving a physical or intellectual phenomenon" (Briet, 2006, pp. 9-10). In a much used citation Briet asks if a pebble rolled by a torrent or a living wild animal is a document? Her answer is no. "But […] the stones in a museum of mineralogy, and the animals that are catalogued and shown in a zoo, are documents (p. 10). In a discussion of "Briet's rules for determining when an object has become a document" Michael Buckland argues that:

(1) there is materiality: physical objects and physical signs only;

(2) there is intentionality: it is intended that the object be treated as evidence;

(3) the objects have to be processed: they have to be made into documents; and, we think; and

(4) there is a phenomenological position: the object is perceived to be a document (Buckland, 1997, p. 806).

Briet's and Buckland's rather open-ended definitions of the term document will be our starting point for the discussion of how documentation can be understood in a Sámi context.

Language as a way of thinking: can we find equivalent terms for documents and documentation in Sámi terminology?

Konrad Nielsen was of the opinion that their language revealed the the Sámi as an "observing people" (as cited in Nesheim, 1955, p. 186). Sámi is a language where the verb has a more prominent position than the noun compared to many other languages (Sammallahti, 1998, pp. 107-114). The consequence of this is that in Sámi there are many words for processes. Nouns, on the other hand, usually describe conditions and objects. The Sámi language has a well-developed system for derivations, where nouns can be constructed from verbs and the other way around and there is a tendency to emphasize process and interaction more than objects and substance (Karker *et al.*, 1997, p. 144). These differences may be related to a society's deeper perceptions of the relationship between nature and man, a fact that Norbert Wiener (1961) was well aware of. He observes, when discussing the biological and psychological sciences in the nineteenth century, that in psychology the scholastic emphasis on substance and mental content had survived from a worldview "in which the noun was hypostasized and the verb carried little or no weight. Nevertheless, the step from these static ideas to the more dynamic point of view of the present day […] is perfectly clear" (p. 127). A verb-driven language has a deep impact on an oral society's mentality and way of thinking (Ong, 1982). We might say, somehow simplified, that nouns stand for permanence and borders, while verbs to a larger degree express change, processes and openness. To test this assumption, we will look at relevant Sámi terminology and discuss its use in different contexts. We start by discussing the use of equivalent words for a document, to document and documentation in Sámi. Our hypothesis is that Sámi nomenclature, with its focus on relationships and processes, shows a dynamic understanding of documentation, focused on relationships and processes between entities.

In Sámi the noun "document" is available as a loanword, *dokumeanta*. The corresponding verb is *dokumenteret* (to document) and *dokumentašuvdna*

(a documentation) (Sammallahti and Nickel, 2006, p. 206)[4]. These loanwords in Sámi mainly refer to the narrow meaning of documents, usually written formal documents, contracts and other legal documents. In the Sámi language there are other verbs with relevance for Briet's definition of documents as "a proof in search of a fact" (Briet, 2006, pp. 9-10). The most prominent of these is the verb *duođaštit* (the consonant "đ" is pronounced like the English "th", as in "this"), which can be translated to testify, bear witness, confirm. This is derived from the noun *duohta* or *duohtavuohta* which translates to truth, sincereness, seriousness (Nielsen, 1962, Vol. 1, pp. 598-599). From the verb *duođaštit* we also have the derivation *duođaštus* (noun), which can be translated to "evidence, testimony, confirmation, character, testimonial, receipt" (Nielsen, 1962, Vol. 1, p. 585). The noun *duođaštus* is in some respect equivalent with the English term "documentation", but *duođaštus* denotes both something made or said as a proof or attestation, but also something (thing or action) that according to its nature serves as an evidence and is acknowledged or proven to be true[5]. When a phenomenon or occurrence in nature can prove or give evidence of something, the term *duođaštus* or *vuohttit* (Nielsen, 1962, Vol. 3, p. 828) – to find traces, to observe, get to know – can be used about this occurrence. It is not the occurrence in itself, but what it documents (the truth), that can be termed *duođaštus*. The verb *vuohttit* can be used as a term when you look for people's attitudes and intentions when they act, i.e. to find proof or evidence that a person had hidden intentions when he acted. So *vuohttit* can be used both as an extensional definition as in finding out about intentions, but also in a more concrete sense when looking for traces in the terrain. Let us give one example: if you have a quarrel about two different reindeer herds that intermingle you "look for traces" – *vuohttit* – in the terrain that prove your point. If you find these traces they can serve as a documentation – *duođaštus* – of the intentions and attitudes of the owner of the neighbouring herd. To interpret and "read" traces, especially in snow and ice, is common knowledge among the herders. During eight month of the year the Sámi tend their reindeer on a ground covered with snow. In Sámi snow terminology there are many hundred terms for snow conditions and processes describing the way snow transforms due to changing weather and temperature (Eira, 2012; Jernsletten, 1994; Magga, n.d.) The Sámi word *njeađgat* (verb) means "snow blowing lightly over tracks". This verb describes a process, *njeađgat*, with *njeađgan* (noun) as a result, which could be translated with "the wind blew a little, so that snow settled on the tracks leaving them barely visible" (Nielsen, 1962, Vol. 3, p. 109. *Njeađgat* is spelled as *njæđgat* in Nielsen). The word *njeađgan* shows how much information a reindeer herder can attach to one or two words, and in general how much information any word in any language can carry. There is a relation between the way you see or perceive a landscape and the terminology you use to describe it (Meløe, 1990, p. 68). A Sámi herding his or her reindeer, *a badjeolmmoš* or *boazosápmelaš,* sees different things in the landscape compared to an outsider and uses a different terminology to describe what s/he sees. The Norwegian philosopher J. Meløe (1990) formulates it this way: "There is a rich and well-ordered set of words or concepts that is proper to reindeer herding. This order, and the intelligibility of each of its concepts, collapses if we cut off its links to the practice of reindeer herding" (p. 79).

It is important to compare terms like *vuohttit, duođaštit* and *duođaštus* with the terms "document" and "documentation", because understanding the terms have practical and political implications. In recent Norwegian and Canadian High-Court rulings concerning land and water rights, different sorts of documentation based on

traditional use is better understood through terms like *vuohttit, duođaštit* and *duođaštus* than "document" and "documentation" (Cruikshank, 1992; Grenersen, 2012; Matningsdal, 2002). We will discuss this point later in the paper.

Landscapes as documents

For indigenous populations all over the world, rights to land and natural resources through traditional use are seen as essential to continued cultural survival and economic development (Krupnik *et al.*, 2010). In countries like Norway, Canada, USA, Australia, Greenland (Denmark) and New Zeeland there has been a growing awareness among researchers, politicians and lawyers of the importance of indigenous forms and traditions of documentation. This is a consequence of political and juridical processes and questions related to land and water rights, intellectual property rights and cooperation between state authorities and indigenous people concerning models for co-management. Examples on such questions concerning documentation for land and water rights in court cases can be found in the Svartskog ruling in Norway, the Delgamuukw rulings in Canada and the Mabo case in Australia (Grenersen, 2012; Hernes and Oskal, 2008; High Court of Australia, 1992; Lovdata, 2015; Mabo case, n.d.; Palmer, 2007; Supreme Court of Norway, 2001). In the Delgamuukw case (on appeal in 1997) Chief Justice Lamer referred to "The Report on the Royal Commission on Aboriginal People from 1996" which he saw as proving "a useful description of aboriginal oral history":

> The Aboriginal tradition in the recording of history is neither linear nor steeped in the same notions of social progress and evolution [as in the non- Aboriginal tradition]. Nor is it usually human-centred in the same way as the western scientific tradition, for it does not assume that human beings are anything more than one – and not necessarily the most important – element of the natural order of the universe. Moreover, the Aboriginal historical tradition is an oral one, involving legends, stories and accounts handed down through the generations in oral form. It is less focused on establishing objective truth and assumes that the teller of the story is so much a part of the event being described that it would be arrogant to presume to classify or categorize the event exactly or for all time. […] Those who hear the oral accounts draw their own conclusions from what they have heard, and they do so in the particular context (time, place and situation) of the telling (Judgements of the Supreme Court of Canada, 1997, section 85, cf. Report on the Royal Commission on Aboriginal Peoples, 1996, p. 38).

The challenge the court faces in what the report calls the "aboriginal tradition in the recording of history" is to understand aboriginal peoples' close relationship to animals and nature, and to make sense of tradition that sees oral accounts, legends, yoik and traces in landscapes as forms of documentation (Allen and Turner, 2010; Basso, 2004; Cruikshank, 1992; Grenersen, 2012; Turner, 2012). If we define only written texts as "true" documents, we miss other important ways of documenting through stories, songs, festivals, performances, dances and physical inscriptions in other materials than paper. In the Delgamuukw ruling (on appeal) the evidentiary difficulties in adjudicating aboriginal claims were clearly acknowledged by the judge:

> A court should approach the rules of evidence, and interpret the evidence that exists, with a consciousness of the special nature of aboriginal claims, and of the evidentiary difficulties in proving a right which originates in times where there were no written records of the practices, customs and traditions engaged in it […] (Judgements of the Supreme Court of Canada, 1997, section 80).

When no written records exist, oral testimonies and the way the landscape itself can be seen as documenting a certain traditional use must be accepted as evidence in court and treated as "proof in search of a fact" (Briet, 2006, p. 9). In Australia the High Court decided in 1992 in the Mabo case that Aboriginal and Torres Strait Islander peoples enjoyed rights to their lands according to their own laws and customs (Mabo case, n.d.; High Court of Australia, 1992). In the Norwegian "Svartskog" ("Black Forest", in English) case, a Sámi village won a trial in The Supreme Court against the Norwegian state and was granted collective ownership to grazing and logging land due to "time honoured rights", although the Norwegian government possessed a legal title deed to the area (Bjerkli and Thuen, 1998; Grenersen, 2012; Matningsdal, 2002; Supreme Court of Norway, 2001). Oral testimonies and the way the landscape and pasturelands could be seen as documenting a certain traditional use were accepted as evidence in court. The Supreme Court Judge in charge of this case said that written historical documents, oral traditions, anthropological reports and marks or signs in the landscape were treated as documents in court proving that the inhabitants of the village during many generations had used the area "in good faith" (Grenersen, 2012, p. 131; Matningsdal, 2002, pp. 63-71). The concept "in good faith" is an important juridical principle in Norwegian law, covering the right to use natural resources by established custom (Matningsdal, 2002, pp. 63-71). The Supreme Court Judge also said (although this was not mentioned in his written paper following the lecture) that his upbringing on a farm helped him to see and "read" the different uses of pastures when the jury made their inspection in the field. For him the differences between how herded reindeer vs domesticated cows, goats and sheep grazed the area documented how the land had been traditionally used and by whom[6]. The judge perceived the landscape as a document that evoked mental images of earlier experiences that validated it as "supporting a fact". We can assume that the cultural background of the Supreme Court Judge (growing up on a farm) facilitated his observation and enabled him "to read" or see marks, tracks and remnants in the landscape as messages to be informed by (Grenersen, 2012, p. 131).

The Supreme Court judge did not give theoretical arguments for his decision to sidestep the written title deed and instead "read" the landscape as a text. But in his book *Bibliography & the Sociology of Texts,* D.F. McKenzie reminds us that books are only one among many kinds of textual artefacts:

> if there is any sense in which the land – not even a representation of it on a map, but the land itself – might be a text" […]. Let me begin then with asking […] think not of books as the only form of textual artefacts, but of texts of many different kinds of many different material forms, only some of which are books or documents […] (McKenzie, 1999, pp. 39-41).

There are other "texts" stored in many different material forms. In modern bureaucratic states documents and records are stored in institutions like libraries, museums and archives. The purpose of these institutions is to classify things like books, artefacts, pictures, sound recordings and dossiers, and store them in different mediums. They deal with "information as things", symbolic representations of languages, sounds, music, landscapes, animals, stars, whatsoever:

> People are informed not only by intentional communications, but by a wide variety of objects and events. Being "informative" is situational and it would be rash to state of *any* thing that it might not be informative, hence information, in some conceivable situation. Varieties of "information-as-thing" vary in their physical characteristics and so are not equally suited for storage and retrieval (Buckland, 1991a, b, p. 359).

But the "thing" itself – the teller of the story, the animal in the wild, the landscape – are not stored in these institutions. The landscape is represented through symbols on a map, the wild animal is taken out of its natural habitat and fenced in a zoo and the film is only images on a screen. "The word, 'cat', has no fur and cannot scratch" (Bateson, 1972, p. 178). For the Sámi a living animal taken out of its natural habitat is a weak form of documentation. A fenced reindeer does not tell you much about how this animal behaves in the wild. Briet's assertion that an animal in the wild is not a document does not make sense in a Sámi context where the animal in the wild can be observed as a vital source for information connected to nearly all aspects of the herders' practice. The behaviour of animals in relation to weather and the landscape is the most important source of information available for the reindeer herders when on trek, even today in the digital age (Jernsletten, 1994; Eira, 2012; Eira *et al.*, 2013).

Indigenous peoples' relationship to stories and places in the landscape are important sources for knowledge and political action (Basso, 2004). In his discussion of the function of oral stories of the Arunta people of New Zeeland, McKenzie observes that "every prominent feature of the landscape in the Arunta country is associated in tradition with some totemic group" (McKenzie, 1999, p. 40). He mentions rocks, caves, trees and creeks and says that they are not only sacred objects, but also "verbal texts", for "each one is embedded in a story, has a specific narrative function, and supports in detail the characterization, descriptive content, physical action, and the symbolic import of a narration" (McKenzie, 1999, p. 40). Rocks, caves and trees do not have to be represented in words or images to have information value for the Arunta people. McKenzie writes: "[…] what constitutes a text is not the presence of linguistic elements but the act of constructing", and he quotes Roland Barthes speaking of different forms of texts as the material of myths "[…] all that is required is that they "presuppose a signifying consciousness" (Lavers, 1984, as cited in McKenzie, 1999, p. 43). McKenzie argues that today stories connected to special places in the landscape are being used by aboriginal groups to fight for their rights against mining companies, although such companies have legal rights based on written documents. It is the moral system of the group that can be read out of the landscape and "which now supports a political structure dedicated to the belated preservation of the texts which make up a culture" (p. 43). The stories and their connection to the landscape are documentary forms that the Arunta people can use as evidence of their right to use the land. This is a culture-specific form of documentation, woven into practices the people have developed through centuries living in, and from, the land.

According to McKenzie (1999) texts in the form of written or printed documents are still widely distrusted by the Maori of New Zealand, mostly because of the strength of oral traditions (p. 42). But also for one historical reason: "For many Maori, the archetypal document – The Treaty of Waitangi of 1840, by which British sovereignty was secured over New Zealand – stands as a symbol of betrayal" (p. 42). This treaty deprived the Maoris of their land. McKenzie (1999) sees this as an "European exploitation of the legal power of documents over agreements reached orally" (p. 42). He has studied the Maori signatures appended in 1840 to the Treaty of Waitangi. Many of these are not signatures in the usual sense of the word, but "most are complicated configurations" (1999, p. 42). The signatories who could not write signed with such "configurations". McKenzie wonders if these "forms of writing", as he calls it, "may in fact be representations of natural features of the tribal lands from

which the signatories came" (1999, p. 43). The British saw these signatures as "an assent to their assumption of sovereignty", while for the Maori "they signified tribal lands over which they thought they would continue to have sovereign control under the queen`s protection" (1999, pp. 42-43). McKenzie's interpretation is that in these "signs we can see the idea of place hovering between the verbal and non-verbal, but rising, as it were to textual significance" (1999, p. 43). McKenzie does not present us with the fundamental building stones of what he calls "verbal texts" (1999, p. 40). In our perspective these "verbal texts" are knowledge systems accumulated through experience and close relationships with the environment.

Fundamental forms of documentations

How did the Sámi accumulate advanced knowledge about animal behaviour, snow and ice, clothing, building techniques; knowledge that is needed to survive and live well under extreme conditions? (Eira, 2012; Eira *et al.*, 2013; Jernsletten, 1994; Turi, 2012). What were their information- and documentation systems? (Bates, 2006; Fjellheim, 1991; Grenersen, 2012). We define knowledge in line with Bates as "information given meaning and integrated with other contents of understanding" (Bates, 2006, p. 1044). In the Sámi *sida* (village) knowledge was transferred orally and through practices involving physical things, like the use of tools and other artefacts, building of dwellings, hunting and fishing. Contact and communication with wild and tamed animals and observation of weather phenomenon and landscape formations were other information sources. Most of the artefacts involved were organic and bound to disappear in rather short time. Jernsletten (1994) says about the transfer of knowledge in the Sámi society: "After generations of experience, knowledge about natural resources is being preserved and passed down with the help of a rich selection of concepts" (p. 252). The Sámi language includes comprehensive terminology with precise definitions for describing winter ecology like snow-covered ground, snow-packs, tracks on snow, grazing conditions for reindeer, and numerous other structures in the snow-pack during winter, spring and autumn (p. 253). Sámi knowledge about ice and snow conditions is still well preserved among reindeer herders, but according to Jernsletten: "this knowledge may be lost when operation methods change along with the introduction of modern technology, and because the educational system does not preserve it" (1994, p. 253). In order to make this terminology and knowledge available to the user "[…] he or she must go through a time-consuming learning process; words and concepts must be stored in memory and the language should be used in practical activity, at work" (1994, p. 253).

The practical activity among the Sámi herders and the relevant terminology can be defined as an information system. We borrow the term "information system" from Buckland: "systems that provide information services intended to result in human beings' becoming informed […]" (Buckland, 1991a, b, p. xiv). Buckland limits his definition to institutions like archives, museums and libraries, but we take the liberty to use the term in line with what Marcia Bates calls "fundamental forms of information" (Bates, 2006). Bates presents a theory for the information flow between nature, animals and people. Nature, according to Bates, as it is shaped without the interference of people, contains inconceivable amounts of information that "exist independently of living beings in the structure, pattern, arrangement of matter, and in the pattern of energy throughout the universe […]". Information, "as an objectively existing phenomenon in the universe", can be "acted upon by living beings in countless different subjective ways" (Bates, 2006, p. 1034). She shows how information contained in a

landscape – the formation of rocks, stones, the way rivers run, how trees grow a hillside, formations of snow according to wind and temperature – are interpreted by, and forms the behaviour of, animals and people. Bates calls this first-orders information patterns. People living off and close to nature must know how to interpret these patterns (Bates, 2006, p. 1034). Bates' model is well suited to explain how "natural information", existing in the material world, becomes "represented information" when interacting with animals and human beings in different ways (2006, p. 1035).

The Sámi have observed the forces of nature, change and stability, regularities and irregularities, for hundreds of years. They do not interpret this information every time a new situation occurs, the knowledge is stored in the herders' highly specialized language and in what Bates (2006) calls "enacted information: The pattern of organization of actions of an animal in, and interacting with, its environment, utilizing capabilities and experience from its neural stores" (p. 1036). The Sámi have specialized knowledge about nature, and nature-animal relationships (Turi, 2012; Jernsletten, 1994). The half domesticated reindeers in Northern Norway have trekked between the inland and coast together with their herders for 400-500 years, and before that the wild reindeers made similar trek. This movement of animals and people has been regular from year to year. The Sámi are "experts" on how the animals behave when on trek. They "read" and interpret the way the reindeer behave according to the psychology of the animal, the man-animal relationship, the landscape formations and the climate. A reindeer herder can tell how the herd behaves in a special terrain according to weather and season, and they can predict where it will move the next day, maybe the next week, based on their interpretation of this "enacted information" (Bates, 2006, pp. 1038-1039). The routes the reindeer follow between summer and winter pasture are basically the same from one year to another, but there are also variations from the basic patterns. One year the trek can cross the ice on a lake, the next year the ice layer is too thin, so the herd cannot cross it. How do the herders decide when the ice is too thin for the reindeer to cross? They cannot read it in a manual or rely on the weather service. They observe the animals' behaviour when they approach the lake, and combine these observations with their own knowledge from previous and similar situations (Nergård, 2006, pp. 34-65). The Sámi also use place names and stories as "encoded information". Bates (2006) defines this as "information that has symbolic, linguistic, or signal-based pattern of organization" (p. 1044). Many Sámi words for places in the landscape describe qualities related to activities like reindeer herding, and the words store useful information for the herders. Stories are connected to special places like lakes, dangerous ravines or steep mountains, and they are told and elaborated upon among the herders when they camp close to these places (Nergård, 2006, pp. 124-128). If reindeer have been killed by avalanches in a steep ravine 30 years earlier, the story and the reflections on the event will be told by the elder and experienced herders when they camp near the ravine. Names connected to these places often contain information about the dangers for humans and animals when passing through (Turi, 2012, pp. 83-101).

To illustrate this we will present one, rather dramatic, example. *Sorbmegáisá* (1,288 m) is the Sámi name on a mountain in the Lyngen peninsula in Northern Norway, not far from the largest city in Norhern Norway, Tromsø. It is a popular mountain for off-piste skiing. The word *Sorbmegáisá* has *sorbmi* as the first element or word, which means "accidental death" or "place where people or animals can easily lose their lives". The second element is *gáisá* or *gáisi* and that means "high mountain which rises above an elevated mountain plateau" which also has a second meaning "high mountain in

general" (Nielsen, 1962, Vol. 2, p. 22). When people herd reindeer and sheep or hunt in the area, the meaning of the word *Sorbmegáisá* gives information about characteristics, in this case dangers, about the mountain plateau. This knowledge is accumulated through hundreds of years of observation and experience living close to *Sorbmegáisa*. Today only few people at the coast in Troms county can speak the Sámi language and know the full meaning of the word *Sorbmegáisá*, but the dangers connected to the mountain is still common knowledge locally. The *Sorbmegáisá* mountain plateau is very popular for off-piste skiing and much used in the season by skiers coming from the whole of Europe. This is an activity that has a short history, 30 years ago no one would try to descend the steepest part of this mountain in winter. 19 March 2012 five skiers from Switzerland and France were killed in an avalanche while descending from *Sorbmegáisá*. After this accident a report was written by Norwegian Geotechnical Institute (NGI), housing the official investigating unit in these cases. The description of the accident that follows here is based on their report. The report stated that:

> The accident happened when a guided group of 6 persons triggered an avalanche in a big and steep face. The fracture propagated over a long distance resulting in many separated crowns up to 2 m height. The avalanche was about 700 m wide at the top, vertical drop was about 600 m and length almost 2 km. The terrain can be described as a terrain trap since the wide avalanche was channelized [sic] in the valley and buried the victims deeply. The face had also several steep rocky areas (Brattlien, 2012).

NGI used multidisciplinary scientific methods to measure the snow structure, snow consistence and to explain why and how this could happen. Nowhere in the report is the meaning of the Sámi name of the mountain *Sorbmegáisá* discussed. Neither are local inhabitants or reindeer herding Sámi interviewed by NGI and asked if, and how, they navigate in this terrain in different times of the year. Locals interviewed by the regional newspaper said *Sorbmegáisá* is a dangerous mountain and they warned against skiing in the mountain when conditions were as bad as this. The Sámi meaning of the word, translated into Norwegian, was also used as a heading in one of these newspaper articles (Hagen, 2012). The word *Sorbmegáisá* – "the steep mountain that leads to accidental death" or "place where people or animals can easily lose their lives" – is an example of Sámi place names that contain documentary evidence or "encoded information", in Bates' terminology (Bates, 2006, p. 1044). This information, as registered in the Sámi language, ought to be a part of the avalanche scientists' practical knowledge.

As Eira *et al.* (2013) write: "The richness and relevance […] of Sámi traditional snow terms show a distinctly different view of snow compared to the purely physically-based international classifications" (p.117). Let us give an example. Some years – maybe every tenth year – the pastures are covered with an ice-layer, *botneskárta* or *skárta* in Sámi, which can translate with "thin (more or less ice-like) layer of snow frozen on to the ground" (Nielsen, 1962, Vol. 3, p. 428). How do the herders find an area where the reindeer can graze with less trouble, being able to dig through the ice or snow? For this they need knowledge about the way the reindeer graze, how they move through the landscape or are put in the hedge. This demands that they stay close to the animals and are familiar with patterns of organization among them (Bates, 2006, p. 1034; Turi, 2012, pp. 37-45). These patterns of organization can be made both intentionally and unintentionally, according to Bates (2006, p. 1040). She uses the term "mould" for these processes: we mould the world around us in such a way that it suits us, intentionally by

building roads, houses, making equipment, printing books, etc. We mould it unintentionally as when animal and people trek through the mountains for generations and make a path (Bates, 2005). The Sámi, in their close relationship with the reindeer herd, mostly relate to unintentionally moulding, like paths made of animal and man, traces after campgrounds and the way a part of the landscape has been grazed. Natural phenomena of ephemeral character might also be a process of moulding: waves on a lake or a fjord are patterns of "matter and energy" (Bates, 2006, p. 1033) that inform the reindeer herders about sea streams, wind direction, temperature (cold water forms different waves than warmer water). When thousands of reindeer every spring swim the waters between land and the summer pasture on the islands along the North-Norwegian coast, the pattern the reindeer form in the sea, their movements according to the stream and winds, can be called unintentional moulding (Bates, 2005). In the Sámi society these moulding activities are not written down in manuals or books, they are mostly transferred through stories, gestures and role imitation where the young herders learn from experienced adults (Nergård, 2006, pp. 17-34). Information is stored in all those words and terms that are in special use in the reindeer husbandry, with a rich variation for descriptions of processes in nature and nature-animal-man relationships (Jernsletten, 1994; Magga, n.d.; Turi, 2012). Moulding process sets lasting marks in landscape formations. Bates characterizes this as embedded information: "the pattern of organization of the enduring effects of the presence of animals on the earth" be it "incidental, as a path through the woods, or deliberate, as a fashioned utensil or tool" (Bates, 2006, p. 1036).

Conclusion

The meaning of the words "document" and "documentation" is influenced by the language, activities and contexts they are used in. When these terms enter a language as loanwords, as in Sámi – *dokumeanta*, *dokumenteret* and *dokumentašuvdna* – their original meaning follow them into the new language. In Sámi this means that these words are used in connection with forms, contracts, bills, reports and other written or printed texts (Scott, 1990, p. 11). But in Briet's (2006, pp. 9-10) and Buckland's (1997, p. 805) definitions "documents" are connected to "evidence" and "proof in search of facts". Buckland also emphasizes a phenomenological position where "(t)he object is perceived to be a document" (1997, p. 807). This indicates that other terms in the Sámi language than *dokumeanta*, *dokumenteret* and *dokumentašuvdna* are equivalent to Briet's and Buckland's definition. We have presented some of them in this paper.

In recent years rulings in Canadian, Australian and Norwegian Supreme Courts have introduced concept where the Sámi terms for documentation – like the term *dovdat* (and other indigenous concepts) – are viewed as equal with written documents. In cases where a group of people cannot use written treaties as proof of ownership, traits in the terrain, oral historical narratives and building techniques have been presented in court as documents of equal value as paper-based treaties. The legal system has a long tradition for handling oral documentation as evidence (Metzger, 2004). In this paper we have given examples on how the courts in Norway, Canada and Australia in some important cases show an increasing understanding for indigenous forms of documentation.

The information and documentation sciences need theoretical models for analysing different forms of documentation. Marcia Bates' (2005, 2006) theoretical work on information and knowledge in an evolutionary perspective is of special interest in this

setting. Her theories make it possible to build hypothesis and analyse information- and documentation processes between nature, animal and people.

The Sámi writer Johan Turi (1987, 2012) wanted the authorities to meet the Sámi in the open, up in the mountains, so that the "Sámi could make his own affairs quite plain" (2012, p. 11). He knew that the nomadic Sámi life form only could be understood if one of the Sámi terms equivalent to documentation, *dovdat* – "to know and experience a reality" – could form the basis for the conversations. The authorities often based their decisions on "documented facts", without thoroughly knowing the nomadic Sámi life form. However, the Sámi understanding is that you have to know and experience this life in order to document it. In Turis' words: "I am a Sámi who has done all sorts of Sámi work and I know all about Sámi conditions" (2012, p. 11). But Turi knew the conversations would not be premised on the Sámi understanding – through *dovdat* – so he wrote his book so that some main features of the traditional nomadic life form should be documented on paper. Hundred years later, *dovdat* still seems to make itself heard among reindeer herders, in courtrooms and in daily conversations.

Notes

1. The book was translated from its original Sámi text to English in 2012 (Turi, 2012).
2. The terms mean the same.
3. The word *Yoik* or *Joik* is not to be found in the Oxford English Dictionary (www.oed.com/).
4. Translated to English by the authors. In Sammallahti and Nickel (2006), *dokumeanta* is translated with "Dokument, Urkunde", *dokumenteret* with "dokumentieren, belegen" and *dokumentašuvdna* with "Dokumentation" (p. 206).
5. In Sammallahti and Nickel, 2006, *duođaštus* is translated with: "1. Beweis, Nachweis, Beleg, Bestätigun; 2. Aussage, Zeugenaussage, Beweismittel; 3. Beglaubigun, Schein, Bescheinigun, Zeugnis, Attest" (p. 215).
6. Lecture by Supreme Court Judge, Professor Dr Juris Magnus Matningsdal, at the conference "The Sámis' Right to Self-Determination as an Indigenous Population", University of Tromsø, Norway, 28 February-1 March, 2002. Notes taken by the author (see reference for published version).

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