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An Analysis of the Images of Four Birchbark Scrolls from Central North America

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Abstract. – The Algonquian-speaking peoples create, used, and made images which are subdivided into three groups. These images were occurred on a variety of objects to communicate information, meanings. It is known that only the *Midé*, their ritual and medicinal specialists (shaman), used a specific group of these images, those on birch bark scrolls. Four birchbark scrolls were examined using the same techniques that were applied to the pictograph sites (rock art sites) of Lake of the Woods to establish whether images should be understood as groups or individual elements as they serve as an illustration to counterpoint the pictograph sites. *[Central North America, Algonquian, shape, music, birchbark scroll, shaman]*

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Introduction

Images, or shapes, for the Algonquian-speaking peoples of central North America are a means of communication, but it is difficult to establish both the full range of images used and their possible combinations. These images are one of a number of the images which constitute what can be called the creative landscape of the Algonquian-speaking peoples. Those peoples have a sophisticated knowledge and understanding of how to read, use, and manipulate images by means of a wide variety of objects, including beads, quills, moose hair, and bitten, embroidered, or etched into birch bark for different audiences.[1] Tragically, it is likely that the physical location of the images themselves has influenced which disciplines examine them and the questions asked. A detailed literature review of work on pictograph sites indicates that researchers, who are predominately archaeologists, are more interested in assigning meanings or explanations to the images themselves or to groups of images than in the study of rock art sites and their relationships (Colson 2006, 2007). The paucity of written material on their precise significance is the biggest problem in the analysis of the images of pictograph sites (Colson 2006). Despite the impossibility of establishing their past intent or significance, the search for the meaning of the pictograph sites, such as that one in Fig. 1 below, remains a popular topic amongst the archaeologists. But the birchbark scrolls are examined by a mixture of art historians and anthropologists.

1 Coleman (1937); Copway (1851); Densmore (1910, 1913, 1941, 1974 [1929]); Duncan (1991); Fulford (1992); Henny (1961); Landes (1968); Lanford (1984); Phillips (1984, 1999); Sager (1994, 1996, 2000); Schoolcraft (1851); Vastokas (1984, 1986–87, 1996); Warren (1984 [1888]); Whiteford (1986, 1991, 1997).

Fig. 1: DiKm-3, one of the pictograph sites at Lake of the Woods (Colson 2011).

The images of the pictograph sites, called rock art or "art" depending on the discipline, belong to the visual vocabulary of the *Midé* (shaman), the ritual and medicinal specialist for the community of the Algonquian-speaking peoples as they also made and used images on birchbark scrolls and pictograph sites. A strong connection exists between images on portable objects such as birchbark scrolls and the static pictographs in the landscape, because the Algonquian-speaking people who lived in this region both created and used these images to communicate information. The images were used and created by key members of Algonquian community, the *Midé,* who belonged to the Grand Medicine Society, often called the Midewiwin.[2] But other Algonquian-speaking peoples also might have used the birchbark scrolls. Ethnographic sources from northwestern Ontario indicate that pictograph sites were places in the landscape where the sacred and profane worlds met, and where the *Midé*, or shaman, sought help and consulted the "spiritual grandfathers," who were both accessible and lived in these places in the landscape.

This connection between the shapes created by the *Midé* on birchbark and those existing on the surfaces of rocks was suggested[3] a possible vocabulary of images with meanings. But researchers examine pictograph sites and reference Vastokas and Vastokas (1973), Rajnovich (1987), and Dewdney and Kidd (1962,); they do not customarily examine the other images created by the Algonquian-speaking peoples. The physical location of these images implies that archaeologists did and do not consider the images that do not exist on rocks and they "leave" the study of these "other" images to the domains of art history, anthropology, native studies, and ethnography. Since the user(s) of the scrolls and the possible creators of the pictograph sites could have been the *Midé*, a connection exists between the birchbark scrolls and the pictograph sites. For this purpose the same techniques, methods, and analytical techniques that were applied to the pictograph sites in an earlier study (Colson 2006) now were applied to the four birch bark scrolls. The aim was to determine whether the images on the birchbark scrolls ought to be treated as groups of images or as individual elements. The four birchbark scrolls solely were selected for their immediate availability. Ideally, similar scroll types could have been obtained, but achieving this goal proved impossible in the time allowed. The type of scroll utilised was dictated by what could successfully be obtained with minimal bureaucratic fuss, technical issues, and associated problems. The inherent difficulties of digitising black and white photographs or plates of varying qualities also limited the number of scrolls used. To capture the images it was crucial to examine these images on the original birchbark. Transcriptions or re-drawing are useless. The manner in which the birchbark scrolls were examined is presented and discussed. The results and conclusions are compared to each other and with the conclusions drawn from the analysis of the pictograph sites.

Theoretical Approach

In order to ensure that the results of the examination on birchbark scrolls could be compared with the results of the pictograph sites, the same sequence of approaches was utilised as in Colson (2006). Both the culture-historical and the contextual approach were applied beforehand, because these approaches maximise the amount of information to be extracted. The following two approaches (philosophical frameworks), used by archaeologists to examine pictograph sites in order to establish meaning, the homological (direct his-

2 The debate regarding the origins of the Midewiwin, or the Grand Medicine Society has been discussed by Angel (1997, 2002), Bhar (1991), Balikci (1956), Dailey (1958), Grim (1983), Hallowell (1936), Hickerson (1962, 1963 & 1970), Hoffman (1891), Howey and O'Shea (2006), Howey (2008), Landes (1968), Mason (2009), Meyer (1990), Rogers (1973), and Vecsey (1983, 1984). Spagna (2013) discussed the manner in which anthropologists have considered this entity.

3 Dewdney and Kidd (1962, 1964); Rajnovich (1987); Vastokas and Vastokas 1973).

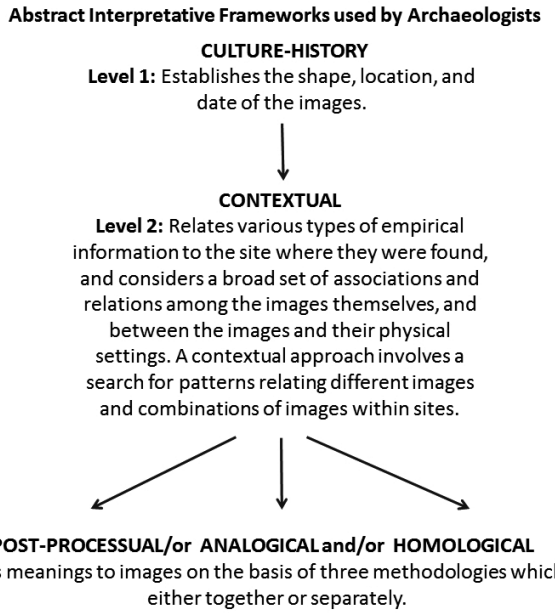

Fig. 2: "Sequence of Theoretical Approaches" (Colson 2006).

torical) and the analogical approaches (see Fig. 2 below), were employed.

The homological approach was utlised to consider the meaning of the images on the birchbark scrolls, since the symbolism and meaning of a group of images was sought. This approach is more advantageous in regions where cultural continuity is strong, as it places a heavy reliance on written materials to create the bridging arguments.

Images Created by the Algonquian-Speaking Peoples

A suggestion of a link is always possible, but the existence of such a link must be proven by the deployment of a considerable quantity of evidence. Images occurred on a range of portable objects in order to communicate information. The images are confined to portable objects, unlike the images on rocks, so they could be carried by people, in bands as they moved from one part of the vast areas of Lake of the Woods to another, from hunting place to gathering place, and from person to person. Language and ideas are portable, so images were an important means by which the Algonquian-speaking peoples communicated information and ideas, regardless of the materials used to create them. The creators of these images manipulated different types of shapes and materials for specific audiences. The rapidity with which the floral ornamentation in beadwork developed and spread supports this idea. Those images that changed most radically in their physical appearance may have been used in a social rather than a religious context. The images that did not experience radical changes, in contrast, belonged to the religious life of the Algonquian-speaking peoples. The *Midé* used a specific group of images on birchbark scrolls and the Algonquian-speaking peoples used a wider variety of images to convey information. The images on the birchbark scrolls behave as mnemonics, in a variety of scenarios, designed to convey information over several generations for use by the *Midé*. The *Midé*, as ritual and medicinal specialists, as shaman, are key members of the Algonquian society which connect the images on portable objects and static entities in the landscape. The key difference between the pictograph sites and those images on portable objects is the following: pictograph sites remain static points of contact between different members of the same group, different groups, bands, and between the different worlds of the Algonquian belief system, whereas images on portable objects are not static points of contact. These images and the objects on which they exist have continuously changed and have been manipulated over time for different audiences. Ethnographic sources indicate that the pictograph sites were places where the sacred and profane worlds met and where the *Midé*, or shaman, could go to meditate by seeking help and consulting the spiritual grandfathers. Many researchers have examined the images recorded on

birchbark scrolls, including Frances Densmore, the founder of ethnomusicology.[4]

The strong similarity of the images found on the static and portable objects used by all, and those created by the *Midé*, strongly suggested that it could be a useful endeavour to examine several examples of the images on birchbark. Some of these images, e. g., #1 (Figs. 3, 4, 5) and #3 (Fig. 7), bear a strong physical resemblance to those of the pictograph sites in the Lake of the Woods. Other images on both these scrolls and on birchbark scrolls #2 (Fig. 6) and #4 are radically different, and bear no physical resemblance to the images of the pictograph sites in the Lake of the Woods. A brief examination of the four birchbark scrolls indicates several arrangements for the images they contain. Initial observations suggest that the precise rationale behind the arrangement is difficult to establish and the meaning of the images on birchbark scrolls is obscure. This observation indicates equal difficulty in determining the arrangement of the red images on the pictograph sites. The biggest problem in pictograph image analysis remains the paucity of written material on the precise significance of each painted red image on the rock's surface. Comprehension of either the significance of the images or their intent is a challenge. It has impeded archaeologists' attempts to establish both the meaning of the individual shapes and the possible meanings of shapes occurring in various combinations with other shapes at different pictograph sites.

Two questions stand: Do the images both at pictograph sites and birchbark scrolls represent a specific vocabulary? Or did shamans have a specialised body of knowledge of their meaning? Vastokas (1996: 53) supports Boone and Mignolo's (1994) claim that it was important to get away from the modernist Western conception of art as something to be appreciated strictly aesthetically and to consider seriously the idea of visual representations as communication. Vastokas developed her argument, regarding aboriginal art, pictographs, and pictorial representations as "writing", supporting her statement by claiming (1996: 54) that for aboriginal North America the birchbark images, or "birchbark manuscripts," were the most noteworthy expressions of the relations between image and word. Vastokas described the structure and role of the *Midé* and of the Midewiwin Society for the Ojibwa, the role of the birch records for the *Midé*, the range of their physical dimensions, the range of images being used from depictive to symbolic, to be "entirely abstract in character" (1996: 54). Vastokas cited Boone and Mignolo's (1994) claim that the terms writing and art, if applied to most of the aboriginal America, were problematic since, unlike Western and other phonological writing systems, the goal in the Americas was not "visible speech." Vastokas (1996: 57), in further support of her supposition, cited Boone and Mignolo's proposition that pre-Columbian American art and writing were largely the same thing.

Vastokas (1996: 57) argued that the Ojibwa birchbark scrolls belong to "semasiographic writing systems" which communicate ideas independently of language. Warkentin (1999: 3) asserted that historians of writing divide sign systems into semasiographic language systems (pictography) and phonographic (language based) systems. She claimed that phonographic systems were further subdivided into logographic (where the sign is the equivalent to the word), syllabic (the sign is a syllable), and alphabetic systems. If scrolls were accepted as examples of "semasiographic writing systems," historians, in Vastokas's view (1996: 57), could obtain an insider's view of Native American history. Boone and Mignolo (1994) maintained that within these systems a subset of iconic writing systems exists composed of representational pictographic units that transmit meaning without employing speech. So, anyone wanting to read these pictographic units already knew the general meaning of individual units and could ascertain the meaning of the different combinations.

This notion does not distinguish between the fact that different groups of people might have the knowledge to use some images and not others. Boone and Mignolo's (1994) definition does not allow for the existence of a general vocabulary of pictographic units subdivided into groups which are recognised by the general population as having some meanings. Each group of pictographic units is used by either all or specific groups within that society for different purposes and reasons. Some of these pictographic units are not understood by all. Boone argued that not pictorial and conventionalized images but the placement and context of the images carried meaning. She (1994: 18) assert-

4 Schoolcraft (1851, 1854); Kohl (1986 [1860]); Warren (1984 [1885]); Hoffman (1883, 1888, 1889, 1891); Mallory (1894); Densmore (1910, 1913, 1974 [1928], 1979 [1929]); Skinner (1925); Reagan (1921, 1922, 1927, 1935); Cadzow (1926); Kinietz (1940); Voegelin (1942); Coleman (1937); Kidd (1965); Blessing (1963); Landes (1968); Dewdney (1970 b, 1975); Johnston (1976); Vennum (1978); Nelson (1983); Closs (1986); Fulford (1988, 1989, 1990); Vastokas (1984, 1986–1987, 1996); Spagna (1998).

ed that images behaved as texts in semasiographic writing systems. These writing systems did not have full running texts but a highly conventional set of symbols with meanings similar to those associated with paintings.

Vastokas (1996: 57) arguably uses the trope of images being read as text and asserts that Boone and Mignolo's conclusions regarding Mixtec and Aztec writing systems are pertinent to the pictorial narratives of the Algonquians, and continues her line of argument, that the scrolls are one of a number of visual narratives that historians can use to examine native American history. She asserts, that if the images on the birchbark scrolls are accepted as "semasiographic writing systems," these scrolls are acceptable by historians as visual narratives providing an insider's perspective on Native American history. The consequences of this claim need to be examined. For Vastokas (1996: 57) the scrolls behave as documents as they "merely presented a different set of historical challenges." The "most obvious" problem for Vastokas is "the absence of absolute dating," thus, necessitating additional research into the oral traditions that accompanied visual documents and the contexts in which they have been utilised (1996: 57). She acknowledged that, although some information was lost, a considerable body of information is still extant.

Questions exist regarding the relevance of this body of information, as these images are not accompanied by written documentation. The Algonquian-speaking peoples identified a specific group of images, and it is clear that those images were used as a means of communication. The techniques used to create them have shifted over time. It is clear that not all of these images changed radically in appearance and experienced changes in meaning. So, did the Algonquians deploy a specialised vocabulary when these images were created? Previous researchers observed differences in the types of images used for information.[5] Images were used in two contexts: the "sacred" and the "profane." Vastokas (1984) as an art historian defined two functional types of images, which she called "iconic" and "narrative." She argued that the images created by the Algonquian speakers were either read as a group of multiple images, as texts with meaning, or they were read as individual images, as iconography with meaning. Vastokas asserted that these images were "read," but she did not provide a detailed rationale behind her assertion. She defined birchbark scrolls as narrative compositions, as multiple motifs organised in a "more perceptually scattered disposition alluding sequence and movements to the eye across the surface of pictorial ground" (1984: 430). Profile images denoted motion while frontal views indicated action (Vastokas 1996: 57). The manner in which Vastokas arrived at these conclusions remains unclear, but she asserted that narrative art forced the observer to detect the greater visual complexities of the composition (Vastokas 1984: 431). The birchbark scrolls, she concluded, were "narrative visual wholes" to be interpreted in terms of their form and context.

Dewdney (1970 b: 22) identified three types of what he labelled writing: secular, tutorial, and visionary. Those images, left on pieces of birchbark as trail messages at portages and designed to provide useful information to those who followed, are an example of secular writing. Tutorial writing enabled an initiate to learn by rote the traditions and practices of the Midewiwin from the teacher, the *Midé*. These images occurred on the *Midé* scrolls and the members of the Midewiwin Society "read" them as mnemonics. Images such as a dream symbol, obtained from a person's dream guardian during the puberty dream, acted as an example of visionary writing (Dewdney 1970 a: 22). Closs' (1986) article that built upon Dewdney's (1975) work with birchbark scrolls examined the ritual importance and use of numbers, especially the number 4, for the Ojibway and, in particular, for the Midewiwin. He utilised the ethnography collected by Densmore (1929), Dewdney (1975), Hoffman (1891), Johnston (1976), Landes (1968), and Warren (1984 [1885]). Closs (1986: 181) followed Dewdney's (1975: 12) definition of pictography, which was used as "a generic term for any form of preliterate art – executed on any available surface – that is known, or is assumed to have had communicative rather than decorative or aesthetic intent." Closs (1986: 182) agreed with Dewdney and argued that this pictography was mnemonic and "did not represent the written word." Closs' argument is interesting, but it remains unclear whether he examined the original scrolls or used the drawings published by Densmore in her 1929 publication and Dewdney in his 1975 publication. It is important to examine the actual scrolls rather than a drawing or sketch of the scroll, because it is possible that the person who made the drawings inadvertently made mistakes in copying the images. A detailed review of the pertinent literature reveals that relatively unchanged images belonged to the religious life of the Algonquian-speaking peoples where images served as mnemonics in a

5 Coleman (1947); Copway (1851); Schoolcraft (1851); and Landes (1968: 172).

variety of scenarios, designed to convey information over several generations to specific individuals, the *Midé*. Schoolcraft (1851: 351), Coleman (1947: 63), Dewdney (1970 a: 22 f.; 1975: 12 f.), Warren (1984 [1885]: 89), Densmore (1974[1929]), and Hoffman (1883: 139) provide examples of images likely used in the profane world and which, hence, underwent some level of physical change and shifts in meaning. Images and indentations, used to mark the totem of the individual buried, were placed on grave markers or on treaties between indigenous peoples and Europeans, on objects to measure the number of generations past, on headboards of bark canoes, on copper plates, as a "signature" which was recognised over a geographical area, and on personal objects. Hunters, trappers, and travellers used images to indicate information about boundaries, trails, and notices of different sorts. Everyone over a wide geographical area recognised and understood this group of images, therefore, the origins and meanings of this group of images were not shamanic. It is equally possibly that the meaning of an image changed upon its context or if it was superimposed on one another.

It is difficult to determine whether the images at pictograph sites, at Lake of the Woods, were created at the same or at different times (Colson 2006). Images made at the same time may tell a story, or the images may have a meaning which is only understood by individuals. If images were made at different times, then the implications for the meaning of these images is impossible to establish. The analysis of the images on the pictograph sites revealed that very few image combinations occur repeatedly at any pictograph sites. The large number of images are termed "blobs," on the grounds that they were no longer recognisable, indicating that many images have decayed, and that sufficient time has passed for them to have deteriorated beyond recognition. The variability of the images at the different sites depends on how professionally these images and the sites were produced. If a shaman produced these images, there would be little variety in the specialised vocabulary used as he/she would restrict this vocabulary to the canon. It is impossible to establish the length of time over which professionals may have created these images. If the patterning of these images at the individual sites is deliberate, then perhaps these images were designed to tell a story.

The question of treating a group of images at a site as telling a story remains. If they are to be considered as a story, the images on pictograph sites must have the same function as those images on birchbark scrolls. An examination of several birchbark scrolls and their images was necessary to establish the range of images, and to uncover any image combination on each or between scrolls. The results were compared to those of the pictograph sites to determine whether birchbark scroll images were used in the same manner and, hence, might have the same type of meaning as those on rock image sites.

The Four Birchbark Scrolls

Four birchbark scrolls were examined: two known as song scrolls, one of medicinal information, and one reportedly about an historical event. The difficulties of digitising black and white photographs or plates of varying qualities limited the number of scrolls used in this analysis. It was important to examine these images in original birchbark form rather than as transcriptions, drawings, or sketches because it is possible that the person who made the drawings inadvertently edited the images they were copying.

The first birchbark scroll, called scroll #1 (Fig. 3), is a digitised file of a black and white photograph taken by Jacqueline Rusak and the author in September 1993 of a birchbark scroll called the "Massacre Scroll," in the Lake of the Woods Museum, in Kenora (Ontario, Canada). Figure 3 shows half of the scroll, as the scroll had been bent in half and could not be opened without risk of breakage, so two photographs were taken (see Fig. 3 and Fig. 4).

The black and white prints of the birchbark scrolls in Densmore's (1910: 100) publication on song scrolls were successfully digitised (see Figs. 6 and 7). Both images of these two birchbark scrolls (#2 and #3) were produced from a black and white print and not from a photograph for the purposes of this study. Both scrolls which are held by the American Bureau of Ethnology at the Smithsonian Museum are part of a larger study with detailed information regarding their context and the meaning of some of the images on the scrolls.

The fourth and final birchbark scroll was photographed and published by Dewdney in 1970 (1970 b: 27 f.), but cannot be presented here, since permission could not be obtained. A detailed comparison of Dewdney's drawing of birchbark scroll #4 (1975: 141), apparently about medical plants and originally from the Ethnology Department of the Royal Ontario Museum (see Fig. 8), with the original photograph (1970 b: 27 f.) reveals that

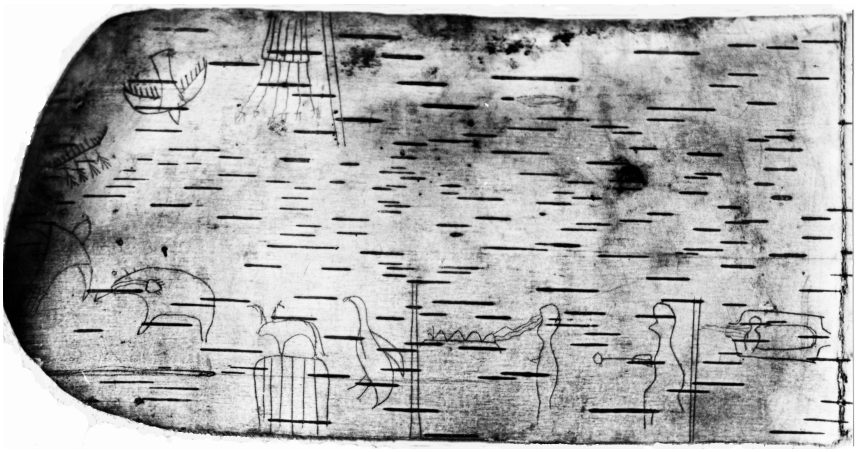

Fig. 3: The left hand part of birchbark scroll #1 (© Colson and Rusak 1991; courtesy of Collections of the Lake of the Woods Museum, Kenora, Ontario, Canada).

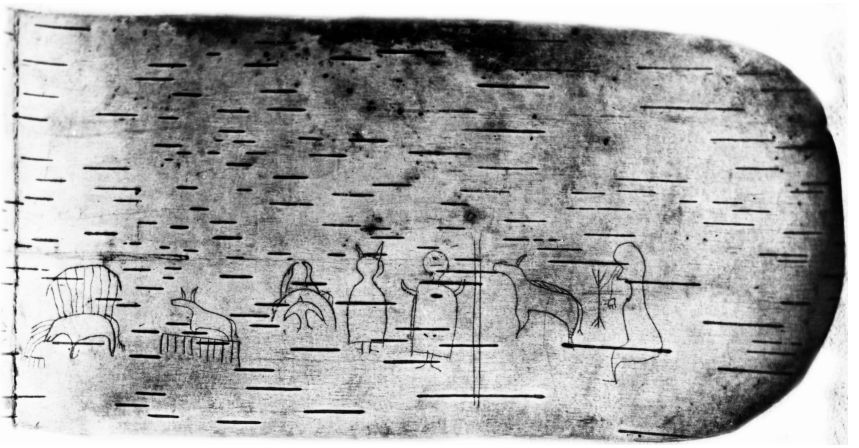

Fig. 4: The right hand part of birchbark scroll #1 (© Colson and Rusak 1991; courtesy of Collections of the Lake of the Woods Museum, Kenora, Ontario, Canada).

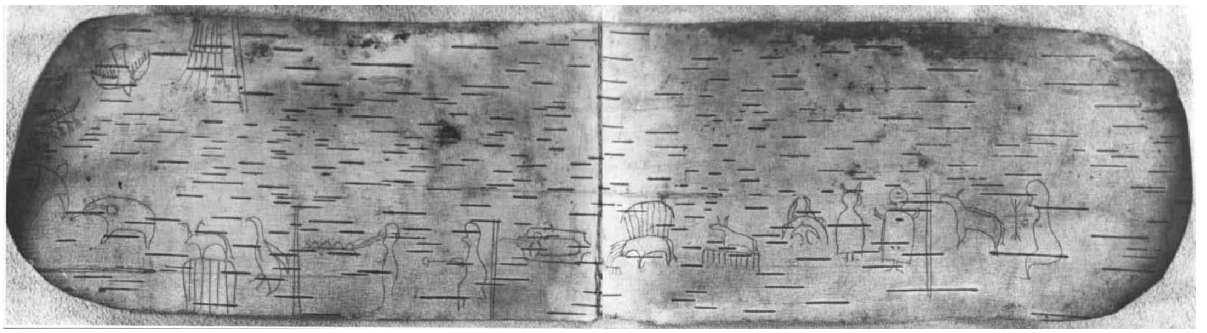

Fig. 5: The entire birchbark scroll called "The Massacre Scroll" 1 (© Colson and Rusak 1991; courtesy of Collections of the Lake of the Woods Museum, Kenora, Ontario, Canada).

Fig. 6: One of the scrolls that Densmore photographed – birch bark scroll #2 (Densmore 1910).

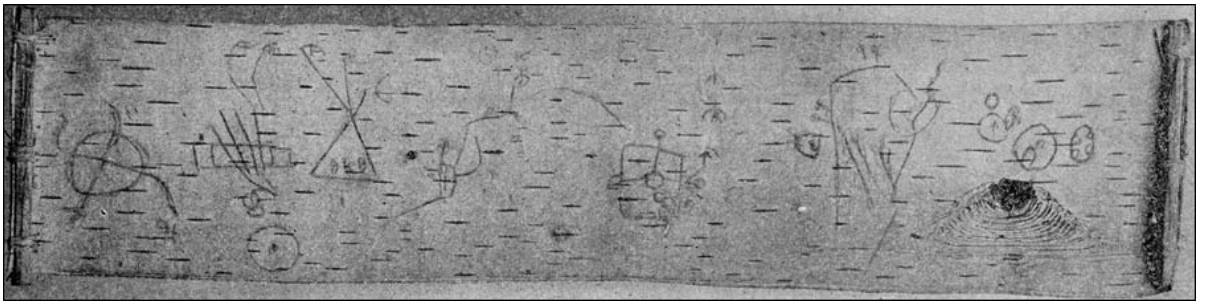

Fig. 7: One of the scrolls that Densmore photographed – birchbark scroll #3 (Densmore 1910).

fundamental differences can be detected in the shapes of the images.[6]

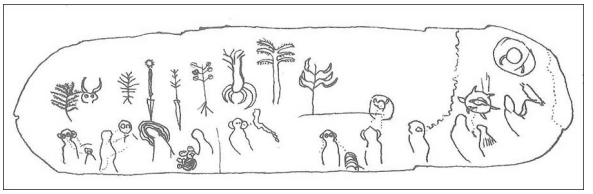

Fig. 8: Dewdney's tracing of the scroll (1975:141, copyright Dewdney and Kidd 1965).

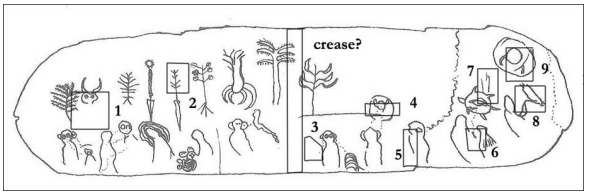

Fig. 9: The nine differences circled in blue between Dewdney's drawing and the original scroll (Colson 2006).

The annotated photograph above (Fig. 9) indicates nine differences between Dewdney's drawing and the original photographed. A labelled blue box outlines each area where lines are missing between the original and Dewdney's drawing. It is clear that Dewdney did not draw the vertical line, which could be a crease, running through the middle of the scroll. A narrow vertical blue rectangle highlights this region of Dewdney's reproduction in Fig. 9.

How Were the Birchbark Scrolls Examined?

The same method and techniques to describe and analyse the images scratched on to the surface of the birchbark scrolls was employed for the images of the pictograph sites. The same sequence of theoretical approaches, same procedures, methods, and techniques were used to describe and analyse the pictograph images and were applied to the images on the birchbark scrolls. As the images of the

6 Careful comparison of each figure in the photograph with Dewdney's tracing above shows that Dewdney missed features of several of the images etched into the surface of the birchbark. These mistakes are inevitable when images on a scroll or document are copied by hand or traced. These differences demonstrate the importance of obtaining a photograph of the actual scroll or a digital version, a TIFF file. Anthropologist G. T. Fulford (1990: 128) realised that problems often occur in the transcription of images on birchbark scrolls. He maintained that it was impossible to provide definitive transcriptions and translations of the Hoffman material. He re-transcribed and re-translated the chants that Hoffman (1891) had compiled before reworking the entire corpus to develop glosses to improve the flow, or to supply better connections between the word and the pictographs. Fulford undertook this task since he saw inherent problems of Hoffman's informants' poetic use of language and Hoffman's own inadequacies. Fulford (1990: 127) concluded that the reproductions of the images on the birchbark scrolls were generally accurate.

pictograph sites in the TIFF files were described from left to right, all of the images on the scrolls were also described from left to right. This approach was taken since all image files were examined using Κλειω IAS[7] from left to right. This method of description also follows Hoffman's (1891: 267) observation that the images called pictographs on the birchbark scrolls were read from left to right, or right to left and sometimes some scrolls used both styles. Coleman (1947: 79) noticed that the scrolls belonging to the *Midé* in northern Minnesota were read from left to right. Vennum, Jr. (1978: 761) argued that migration scrolls used by the Midewiwin Society were read from left to right, since the otter travelled from the east to the west. The contextual information for birchbark scrolls #1, #2, and #3 was purposely ignored when describing the images, as it was only used to apply the contextual approach. Very little contextual information could be found for the fourth birchbark scroll. Information is presented according to the sequence

Cultural-Historical Approach

The images of the four birchbark scrolls are etched on the surface of the birchbark. None of the etched images were coloured. The physical state of these scrolls was not discussed because photographs were used for this study and the originals could not be consulted. Despite great efforts, the difficulty in improving the quality of digitised images of published birchbark scroll photographs became evident. The impossibility of using an original birchbark scroll also limited the research.

There are one hundred and nine images in total, averaging 27.25 per birchbark scroll. Twenty-two of the one hundred and nine shapes have hollow interiors. Five of these shapes are on birchbark scroll #1, eight on birchbark scroll #2, while the remaining nine shapes are on birchbark scroll #3. Birch bark scroll #4 does not have any hollow shapes. Twenty-three shapes, found on all four scrolls, have hollow interiors with lines. There are eight shapes on birchbark scroll #1, seven on scroll #2, five on birchbark scroll #3, and three shapes on birchbark scroll #4. Only three shapes, all on the birchbark scroll #2, had centres that might be described as partially hollow. The remainder of the shapes described were made up of lines and could be described as having neither hollow, hollow with lines, nor partially hollow centres.

The images present are as follows:

1) Five types of shape called a "creature," found only on birchbark scroll #1, exist in this dataset.
2) There are four types of "bird," all on birch bark scroll #1.
3) There is only one "turtle," found on birchbark scroll #4.
4) "Two parallel lines" do not exist. The shape called "two parallel vertical lines" occurs four times and is found only on birchbark scroll #1.
5) "A line of dots" occurs four times on birchbark scroll #4. It does not occur alone, only in conjunction with other images such as circles, lines, and the turtle.
6) "Circle" appears forty-one times. Only six of these circles exist without other circles, lines, squares, or rectangles, four were found on birchbark scroll #2 and two on birchbark scroll #4. The remainder of the circles are attached to other circles, rectangles, squares vertical lines, horizontal lines, and diagonal lines.
7) The "zig-zag" does not exist on its own. It does occur in conjunction with other shapes such as rectangles, horizontal and diagonal lines on birchbark scroll #1 and #4. The zig-zag shape is vertical on birchbark scroll #1 and in the shape on birchbark scroll #4.
8) There are ten shapes that have a "rectangle" as one of their components. There is no such shape consisting only of a rectangle, as they occur only with other shapes such as vertical, horizontal, diagonal lines, and circles. They occur as components three times on birchbark scrolls #1 and #4 and twice on the scrolls #2 and 3.
9) The "square" type of shape was found twice: on birchbark scroll #1 containing six vertical lines and with a "creature" on it; and on birchbark scroll #3 with a circle, horizontal and vertical lines.
10) Two "stick figures" were found, each as part of a larger shape together with circles. One stick figure occurs on each of birch birchbark #2 and #3. Only the top half of the stick figure is evident on scroll #3.

7 Κλειω Image Analysis System is a database management system which permits the researcher to enter information in a structure that reproduces that of the original document. The software enables valuable information to be preserved. It is possible to minimise coding or mark-up on the digital record of a source prior to analysis, preserving features of a document that may sustain conflicting interpretations. Κλειω IAS manages different types of documents, including image files. Therefore, assumptions about the data to be included in the database are kept independent of the data itself. The programme stores all records in a manner that preserves context among records, but these can be defined as logically equivalent for processing (Jaritz 1993: xiv).

11) There are two shapes called "long diagonal line with short diagonal lines on each side" on birchbark scroll #2.
12) Six shapes called "short diagonal line" are all located on birchbark scroll #2.
13) Three shapes called a "very short diagonal line" are etched on birchbark scroll #2. A similar type of shape, "a short diagonal line" and shorter than the other lines of the same type, appears on the same scroll.
15) Only one "one long vertical line" shape exists which is found on birchbark scroll #4.
16) There are four "triangle" shapes. One triangle is on each of birchbark scrolls #2 and #3, the remaining two triangles are on birchbark scroll #4. None appears alone and all have lines of different types.

All other shapes only occur once and represent a combination of vertical, horizontal, and diagonal lines, rectangles, and circles.

It is very difficult to comment upon the style of the birchbark scrolls. It is possible that the two birchbark scrolls (#2 and #3) collected, discussed, and published by Densmore (1910) show more similarities between each other while birchbark scroll #4 published by Dewdney (1970 b: ??) and birchbark scroll #1, photographed in 1993, are similar in style (see Figs. 3 and 4). The physical arrangement of the images on birchbark scrolls #1 and 4 are quite different. The shapes on birchbark scroll #1 are distributed around the edge, while those of birchbark scroll #4 do not share this stylistic characteristic.

Comparison of the Images Found on Birchbark Scrolls and on the Rock Image Sites

A comparison of the above list of shapes with a list of the pictograph sites at Lake of the Woods reveals that shapes called "blobs" are missing in the birchbark scrolls, probably because of different taphonomic conditions each experienced. Like pictograph sites, birchbark scrolls had "creatures," "birds," "stick figures," and "turtle" occurring on their own.[8] The birchbark scrolls also had shapes called "rectangles," "zig-zag," "squares," and "triangles." None of these occurred separately like those on the rock image sites. The largest number of shapes for the four birchbark scrolls are the "circles," but only six of them occur alone. The largest number of images in a group on the pictograph sites were "blobs."

The next largest group of shapes on birchbark scrolls were the "creatures." Five types of "creature" are found on the birchbark scrolls while twenty-three shapes loosely categorised as "creatures" were identified on the pictograph sites. The "creatures" on the birchbark scrolls are considerably more complex than those of the rock image sites. Furthermore, all the "creatures" occur on a single birchbark scroll (#1), while the twenty-three types of "creatures" occur on approximately a third of the twenty-seven rock image sites.

"Birds" occurred both on birchbark scrolls and at rock image sites. The birchbark scrolls had four types of "bird" shapes, while the rock image sites had only two types of "bird" shapes. One of the bird shapes, on birchbark scroll #1, is very similar to the bird shape on the pictograph site called DiKm-3. Although both the birchbark scrolls and the pictograph sites show the "turtle" shape, none of these images had the same physical shape. And although the birchbark scrolls had a "zig-zag," it did not occur on its own but with other shapes such as rectangles, horizontal, and diagonal lines on birchbark scrolls #1 and #4.

The shape loosely categorised as "stick figure" also occurred on the birchbark scrolls on which this shape was always part of another shape, a circle. Twenty-three of the one hundred and nine shapes on the birchbark scrolls were hollow, while only forty-one of the three hundred and eight shapes of the pictographs were hollow. Hollow shapes were found on all four birchbark scrolls, but hollow images did not occur on all of the pictograph sites. The hollow shapes on the birchbark scrolls were drawn as hollow while those of the rock image sites may not have been always hollow. Some of these shapes may have become hollow because of exfoliation, the deposition of white mineral deposits, lichen, and rock tripe encroachment. None of the images on the birchbark scrolls were solid like those of the rock image sites. Images on birchbark scrolls could not be rendered solid in the same manner as those of the sites without etching a hole in the bark. Although these images could not be described as solid, they neither had lines nor other shapes in their centres.

The Twenty-five types of shapes existed on the rock image sites and sixteen types of images occurred on the birchbark scrolls. The birchbark scrolls had a number of images not found on the rock image sites including "a short diagonal line," "a very short diagonal line," "one long vertical line," "circles," "a long diagonal line with short

8 See definitions of each shape identified in the pictographs sites in Colson (2006).

diagonal lines on each side," and "two parallel vertical lines".

The average number of images per pictograph site was considerably lower than the number of images on the birchbark scrolls: 11 to 27.25. Colour use illustrates another major difference, as colour is an important feature of the rock image sites whereas it is entirely absent from the images on the birchbark scrolls. The colour and type of paint prove to be key indicators that sites are being reused. No such clear indication of reuse of the birchbark scrolls is indicated. The range and type of images found on the birchbark scrolls and the rock image sites are quite different. This could indicate that each group of images belongs to a different set used to communicate different types of ideas. The images of the scrolls are more complex than those of rock image sites. The person "reading" and using the images on the birchbark relied on a specialised knowledge: one knew and understood the sequence in which they were used. The birchbark scrolls #3 and #4 could be discussed in this study because Densmore (1910) had consulted her shaman informants regarding the images on them. The data thus obtained indicate that any reader required special prior knowledge to understand the images on the birchbark scrolls and hence demonstrate the value of the homological approach to be discussed later.

Contextual Approach

The small number of common shapes and the variety of unique shapes in this dataset make it difficult to find out whether any combination of shapes is to be found in all of the different birch bark scrolls.

The Context of the Information on the Birchbark Scrolls

Birchbark Scroll #1

Very little contextual information exists regarding this scroll. The dark vertical line in the centre of the scroll is a crease. Dewdney did not examine this scroll, although he spent a considerable quantity of time researching and examining the birchbarks found in the Lake of the Woods region for his book on birch bark scrolls (1975). Rogers (1973: 83), in his review of the book, asserted that Dewdney frequently allowed his own perspective to colour the way in which he classified the spirit world of the Ojibwa. Rogers maintained that present-day Ojibwa "do not" and never did adhere to the Euro-Canadian worldview. According to Rogers (1973: 83), the Ojibwa believe that the same spirits were helpful in one context while they were injurious in another. He cautioned readers of this book to be wary of Dewdney's interpretations of the significance of the symbols on the scrolls. Rogers is considerably harsher than Vecsey (1976) in his review of Dewdney's book (1975). Yet both reviewers severely criticised Dewdney's study for numerous weaknesses, which they ascribed to his lack of scholarly expertise. Dewdney neither mentions the context in his article with the photograph of birchbark scroll #4 (1970 b) nor in the books he co-authored with Kidd (1962, 1967).

Birchbark Scrolls #2 and #3

Both of the black and white photographs of these two scrolls were published in Densmore's publication (1910) on the song scrolls (birchbark scrolls), collected between 1907 and 1909 from the Chippewa Indians of White Earth, Leech Lake, Red Lake Reservation in Minnesota and from a Chippewa who lived in the Bois Fort Reservation in Minnesota. The birchbark scrolls #2 and #3 contain images which Densmore (1910: 96–106) connected with rare medicines, as she argued that the word "medicine" referred to any substance by which results "are supposed to be mysteriously attained" (1910: 96). Densmore transcribed the titles and words of each of the songs on the birchbark scrolls as carefully as possible by using an interpreter. The mnemonic was obtained and published in conjunction with the musical score of the song sung, the words, and the harmonic analysis of the song. Densmore (1910: 96) stated that all of the songs were sung by the shaman called O'dĕni'gûn. She asserted that the songs were examples of songs which were sung either at the dance that followed an initiation or at lodges during the evenings that preceded the ceremony. Densmore noted that only those who had purchased the right to sing them could sing the songs. O'dĕni'gûn, as Densmore discovered, was "one of the most powerful medicine men on the White Earth reservation" (1910: 96). It remains unclear who exactly provided her with this information on the birchbark scrolls. Dewdney neither did examine nor mentioned these scrolls in his book on birchbark scrolls (1975).

Birchbark Scroll #4

Very little is known of the context in which the images on this scroll were created. Although the photograph of the scroll #4 was published by Dewdney (1970 b: 27 f.) in conjunction with a detailed discussion of several pictograph sites in the Canadian Shield, he made little comment about the birchbark scroll itself. Dewdney (1975: 141) asserted that this scroll was a "pharmaceutical song scroll." How he arrived at this conclusion is unclear. Dewdney stated that this scroll was one of several birchbark scrolls given to the Royal Ontario Museum by Francis Fisher, one of the last *Midé* from the English River region of the Canadian Shield (Dewdney and Kidd 1967: 13). Dewdney (1975: 147) found the scroll while examining the large woven medicine bag which was given to him after the death of its owner, possibly during the summer of 1960, "for safe storage in the Royal Ontario Museum." Dewdney did not discuss this scroll, neither in his 1975 publication nor in the publications with Kidd (1962, 1967). Surprisingly he did not comment on this scroll, although it would have been interesting to know his possible reflections. All the more because, on the one hand, he had identified six categories of birchbark scrolls (1975: 21 f.), such as, e. g., origin scrolls, migration charts, master ritual and scrolls, ghost lodge and sky degree, deviant scrolls, and enigmatic scrolls, and, on the other, because of his further assertion, that the principal function of the birchbark scroll was mnemonic.

Meaning

What do these images mean? Ideally, one would use the homological and the direct historical approach, and construct bridging arguments between written data regarding the physical shape of images, their meaning, and the images themselves as discussed at length elsewhere (Colson 2006). This could work effectively for the birchbark scrolls #2 and #3, since Densmore (1910) collected a vast quantity of useful information on the images on these scrolls. Yet, since very little information exists regarding the images' meanings on the scrolls #1 and #4, stating anything concrete about these images, or verifying any recent interpretations and readings given to the images of both these scrolls remains difficult.

Vennum, Jr. (1978) stated that any interpretation and understanding of a group of images on birchbark scrolls can only occur if one is capable of drawing upon a large body of evidence related to each particular scroll and its specific images. He drew extensively upon the work conducted by Blessing (1963) and his informants, who analysed the migration type of scrolls of the Mille Lac Reservation. Vennum (1978: 788) asserted, based on Blessing (1963: 93 f.), Hoffman (1891: 290), and Densmore (1910: 26), that the images, which were mnemonics, "were less generalized and their meanings secretly guarded."

Landes (1968: 172, 224) established, that if images were used on birchbark scrolls, only the shaman who created the scroll knew the specific meaning of the images. The "particular message" of a scroll, or, what the pictographs meant, was probably impossible to establish unless the owner, who was also probably its maker, labelled or translated each figure. Hoffman (1891: 191–193) stated that a candidate could learn the meanings of these images only after paying his fee and preparing himself through fasting and tobacco offerings. The *Midé* used scrolls as mnemonic devices to remember the words of the chants, for the instruction of new members, to record oral traditions, and to perform correct ceremonial procedures. Hence, each scroll and its associated images should be examined in conjunction with a body of data that is securely connected with the scroll in question.

Birchbark Scroll #1

It is difficult to know what the images on the scroll called the "Massacre Scroll" (in Fig. 4) might be. It would be really useful to know when the scroll was written, who wrote it, to whom it may have belonged before it was obtained, and why it was obtained. We do not know when the scroll was written, who wrote it, to whom it may have belonged before it was obtained, and why it was obtained. The text on the back of the black and white photograph, in Jacqueline Rusak's handwriting, states that an Ojibwa elder, whose name is unknown, interpreted the scroll as depicting the murder of La Vérendrye's son[9], his companions, and Jesuit missionaries while they were holding council. Their decapitated bodies were found in a circle. This event happened on one of the islands in the southwestern part of the Lake of the Woods, Ontario. Various useful pieces of information are lacking, e. g., the date, the name of the elder who gave this interpretation, the elder's status within the Ojibwa community, whether the el-

9 La Vérendrye was a Frenchman, the first European-born to have successfully established a fur trade and had worked in Fort St. Charles, on Lake of the Woods in 1736.

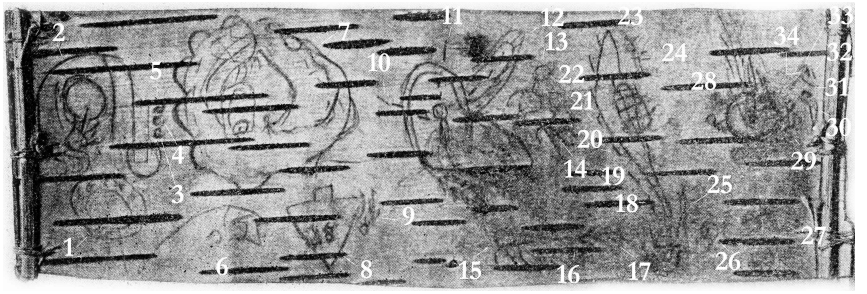

Fig. 10: Birchbark scroll #2, annotated from left to right (Colson 2006).

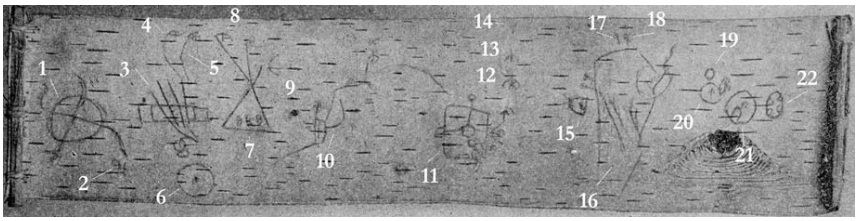

Fig. 11: Birchbark scroll #3, annotated from left to right (Densmore 1910).

der was a *Midé*, and the location of the elder's reserve.

This scroll and its images were utilised by archaeologist Colin S. Reid (1979) in an attempt to date several images extant on some petroglyph sites at Lake of the Woods. He used a technique in archaeology called "relative dating." Reid (1979: 250) relied on an undocumented interpretation by James Redsky, a *Midé* from Shoal Lake on the western side of Lake of the Woods, which might have been the same reserve as that of the unnamed elder. Reid's (1979) article does not give any information on how and whether each image was interpreted by Redsky. It also remains unclear whether Reid collected this information himself but it is certain that he provided some information from Redsky, regarding some of the images on this scroll.

Redsky interpreted the bird-like shapes as a "paisq." He argued that this word roughly could be translated as "bird of omen" and that this image occurred three times on the scroll. Reid consulted Baraga (1992 [1853]: 354), a Roman Catholic missionary who wrote the first Cree/Ojibwa and English dictionary, thereby learning that the word was "peskwe" and meant "a kind of owl." Reid (1979: 250) observed that the "paisq" symbol for Redsky identified "tragedies or undesirable events." If the "wings" were upward to form a "Y," the event was a future one. If the wings were down, the event had already occurred. If the wings were to the side as in the scroll, then the event was taking place. As Reid (1979: 250) had observed, Redsky interpreted the scroll as "purporting to show the massacre of Father Aulneau, La Vérendrye's son, and their companions in the Lake of the Woods."

Birchbark Scroll #2 and #3

The information gathered by Densmore (1910) on birchbark scrolls #2 and #3 provides more significant clues to the images etched upon them. She collected and published these clues on some of the mnemonics called the song pictures, for some of the shapes on both of these scrolls. Densmore (1910: 97–106) provided the song picture that triggered the singing of each song, the Ojibwa words and their translation, the score of each song, its title, and her analysis of each. Her information enabled the identification of each image and each mnemonic visible in both photographs as the ones which triggered the songs to be sung. Both birchbark scrolls are presented (see Figs. 10 and 11) annotated with white numbers and accompanying information so that some of the songs can be identified.

Birchbark Scroll #2

The shapes labelled 12, 13, 14, 15, 16, and 17 (Fig. 10) are part of one song picture (in Fig. 12) identified by Densmore (1910: 100) as the "Song of Good Medicine."

Fig. 12: Mnemonic for the "Song of Good Medicine" (Densmore 1910: 100).

The shapes labelled 18, 19, 20, 21, 22, 23, 24, 25, and 26 (Fig. 10) are another song picture (see Fig. 13), called the "Song of the Crab Medicine Bag" (Densmore 1910: 102).

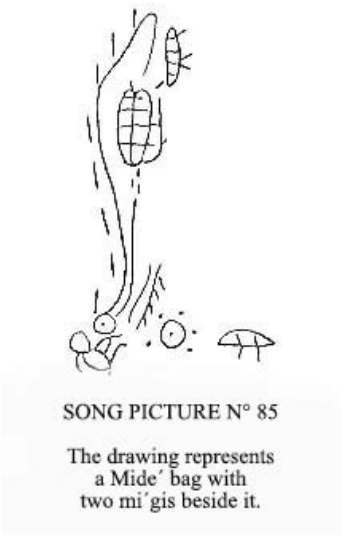

Fig. 13: Mnemonic for the "Song of the Crab Medicine Bag," here called "Song Picture No. 85" (Densmore 1910: 102).

The shapes called 28, 29, 30, 31, 32, and 34 (Fig. 10) are part of another song picture (see Fig. 14), discussed by Densmore (1910: 103) as constituting the "Song of the Fire-Charm."

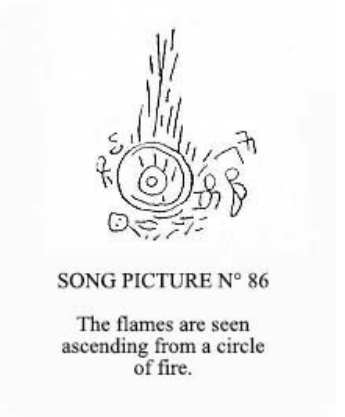

Fig. 14: Mnemonic for the "Song of the Fire-Charm," here called "Song Picture No. 86" (Densmore 1910: 103).

Birchbark Scroll #3

The same procedure was utilised for birchbark scroll #3 using Densmore's information. It is evident that the shapes 7, 8, and 9 (Fig. 11) are part of the song picture for the "Song of the Owl Medicine" (see Fig. 15).

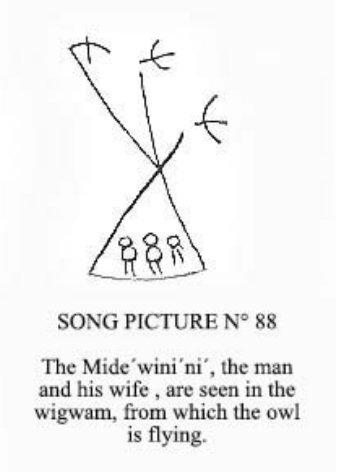

Fig. 15: Mnemonic for the "Song of the Owl Medicine," here called "Song Picture No. 88" (Densmore 1910).

The shape on birchbark scroll #3 labelled as number 10 (Fig. 11) can be identified as the song picture for the "Song of Starvation" (Densmore 1910: 104) seen in Fig. 16.

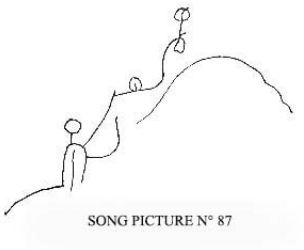

Fig. 16: Mnemonic for the "Song of Starvation," here called "Song Picture No. 87" (Densmore 1910: 104).

The shapes labelled 11, 12, 13, and 14 (see Fig. 11) are identifiable as integral components of the song picture called "Song of the Man Who Succeeded" (Densmore 1910: 98) in Fig. 17.

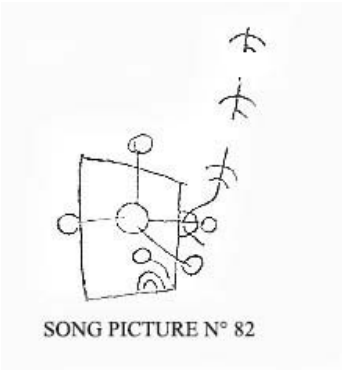

Fig. 17: Mnemonic for the "Song of the Man Who Succeeded," here called "Song Picture No. 82" (Densmore 1910: 98).

Birchbark Scroll #4

It is impossible to state anything except that Francis Fisher had used this scroll. He was a *Midé* in the English River region of the Canadian Shield. Prior to his death sometime after the summer of 1960, he had used this scroll.

Concluding Remarks

There possibly exist differences in description between those who knew the song pictures and those with little or no knowledge of how they should be used together. Without the privilege of knowing what these images mean they are subdivided and dealt with in a manner that could ultimately obscure their significance. It is very difficult to assign a meaning to individual birchbark scrolls. This may not matter, since Vennum (1978) believes the researcher can examine these images and birchbark scrolls in great depth only if he can consult on a large body of ethnographically relevant information. If the body of relevant evidence for each scroll does not exist, then, as Vastokas (1996: 55) advocates, considering these birchbark scrolls as documents becomes problematic. It becomes impossible for the historian to ask the pertinent questions, as, e. g., who made the scroll, who created the images, why were they created, for what purposes, and at which date ~~that~~ the scroll was made? However, should this body of evidence exist, it is still impossible to successfully provide a date for the document, the birchbark scroll.

Conclusion

The results of the analysis of the four birchbark scrolls indicate that it is impossible to ascertain the identity of particular songs, mnemonics, without a body of data that is reliably connected to the birchbark scrolls in question. This study suggests, based on stylistic differences in the types of images, that the images on the pictograph scrolls probably had different functions and uses. It indicates that the images on the pictograph scrolls were used differently. Very few of the images on the birchbark scrolls and the rock image sites are the same. Comparison of the images on the sites and those of the birchbark scrolls reveals little similarity. Comparison of the images found on the birchbark scrolls without contextual documentation and those on the rock image sites indicates that it is impossible to establish what meaning they held for either their creators or the people who subsequently observed them. Therefore, this author disagrees with Vastokas' opinion that birchbark scrolls should be considered as documents (1996: 55). For example, the comparison of Dewdney's drawing of the scroll (1975: 141) with its photographs (1970 b) indicates nine transcription errors. Mistakes in tracing inevitably occur, and the cultural perspective of the individual who has described the shapes must be included.

Vastokas had made two points, both of which are difficult to sustain. She posited that as records of aboriginal history and an historical source of "writing without words" scrolls acted as "representations" of events that took place over time and space (1996). Vastokas (1996: 56) advised establishing "pictorial conventions" but, unfortunately, she did not provide any clues as to the manner in which one might start to undertake this task or articulate precisely how she thought this goal could be achieved. Based upon the small sample of the four birchbark scrolls one can argue, that regarding the meanings of these images very little can be achieved without a substantial body of ethno-

graphic information historically connected to the scrolls. Vastokas' article (1996) is important and her ideas are theoretically good, but they represent an ideal research situation that rarely can be achieved.

It remains to be said that Densmore, when she undertook her research at the early beginning of the 20th century, was aware that she should record the ways in which shamans used the birchbark scrolls. Her approach is far more valuable than positing an abstract theoretical approach. As an ideal research situation we can call the one in which Densmore listened to and interpreted the content of the scrolls.

Now, what can we learn from the examination of birchbark scrolls regarding an examination of pictograph sites? First, these images are combined in a manner which will be a sealed book to someone uninitiated in the graphic vocabulary employed. The images of the scrolls are more complex than those of the pictograph sites. Second, only by drawing on a detailed body of ethnographic, contextual literature directly connected to the images and the scrolls in question, it was possible to establish the combination and meanings of the images. The body of information required to identify and even start to grasp the meaning of the pictograph images has been lost. Perhaps those who may have used it never collected it, since the collection of information regarding images the *Midé* as religious practitioners made, possibly was perceived as more important. Third, the role of the creator or creators with regard to the images of the pictograph sites has been forgotten. In literature, there is put far too much emphasis on the ideas of 20th-century observers, especially on the viewpoints of the archaeologists who encountered them. Fourth and finally, it must be taken care with regard to using ethnographic and archaeological sources for establishing the meaning of these images and the sites.

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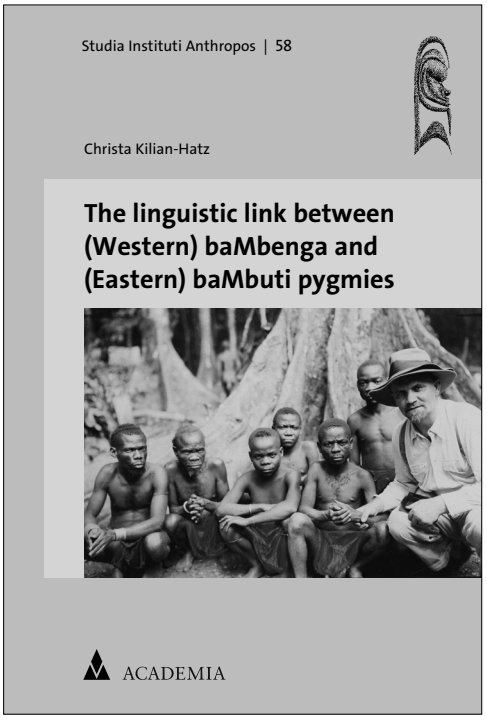
The linguistic link between (Western) baMbenga and (Eastern) baMbuti



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The term ‚pygmies' long time summarized simply all dwarfish populations of foragers scattered all over the equatorial rainforest of Africa. Missionaries and early ethnologists were fascinated by them because they assumed that the pygmy groups had a common origin and were perhaps direct, almost pure descendants of a very early Stone Age culture. The currently about 20 pygmy forager populations seem to be closely related molecular genetically. However, the pygmy populations speak different languages. An early explanation for this fact assumes that the pygmies are the autochthonous population of the equatorial rain forest and as such spoke once their uniform indigenous ‚pygmy' language, a kind of common pygmy proto-language. The present study provides for the first time missing linguistic data of three baMbuti languages: Efe, Atsoa and iButi. The oral literature shows interesting, unexpected parallels suggesting a substratum of a common proto-language.

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