University of Montana

ScholarWorks at University of Montana

Graduate Student Theses, Dissertations, & Professional Papers

Graduate School

2001

Blackfeet cultural continuity and the Biographic Art tradition: The Deadmond Bison Robe example

Janis L. Bouma The University of Montana

Follow this and additional works at: https://scholarworks.umt.edu/etd Let us know how access to this document benefits you.

Recommended Citation

Bouma, Janis L., "Blackfeet cultural continuity and the Biographic Art tradition: The Deadmond Bison Robe example" (2001). *Graduate Student Theses, Dissertations, & Professional Papers.* 5479. https://scholarworks.umt.edu/etd/5479

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.



The University of

Montana

Permission is granted by the author to reproduce this material in its entirety, provided that this material is used for scholarly purposes and is properly cited in published works and reports.

Please check "Yes" or "No" and provide signature

Yes, I grant permission
No, I do not grant permission
Author's Signature:
Date: 8/3/1/01

Any copying for commercial purposes or financial gain may be undertaken only with the author's explicit consent.

8/98

Blackfeet Cultural Continuity and the Biographic Art Tradition: The Deadmond Bison Robe Example

by

Janis L. Bouma

B.A. The University of Montana. 1998

presented in partial fulfillment of the requirements

for the degree of

Master of Arts

The University of Montana

August, 2001

Approved harperson Dean, Graduate School

9-4-01

Date

UMI Number: EP40943

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP40943

Published by ProQuest LLC (2014). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC. All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC. 789 East Eisenhower Parkway P.O. Box 1346 Ann Arbor, MI 48106 - 1346 Blackfeet Cultural Continuity and the Biographic Art Tradition: The Deadmond Bison Robe Example

Chair: Gregory Campbell

A previously undocumented bison robe, named the "Deadmond Bison Robe" is located in the Broadwater County Museum, Townsend, Montana. The presence of many definitively Blackfeet symbols and the absence of symbols characteristic of other Plains tribes leads me to identify the Deadmond Bison Robe as the product of a Blackfeet artist. In addition, seriation was used to show this robe dates to the period 1835-1890, with an approximated dated of 1890.

A relative date of 1835-1890 (approximate date of 1890) for the piece was obtained using seriation of other Blackfeet hide paintings from collections now located around the world including France, Germany, Denmark, Canada, and the United States. Rock art recorded throughout Canada and Montana, as well as painted hides, tipi covers, and war shirts illustrate that remnants of the Early Biographic Art Style of pictography enjoyed a type of popularity in figures that are definitively Blackfeet for a period of *at least* 150 years. The cultural context of Blackfeet pictography is addressed in relation to the Deadmond Bison Robe, as is the robe's relationship to the Early Biographic Art Style of pictography.

The Deadmond Bison Robe is used as a vehicle to address the connectivity between painted robe art and prehistoric rock art. Methodologically, this is accomplished through a functional analysis of hide paintings by addressing the provenience and "authenticity" of the Deadmond Bison Robe. Issues related to European influence on American Indian artistic traditions and counterfeiting of American Indian art and are also discussed.

Acknowledgements

I would first like to thank the many people who supported this research whole-heartedly. First, my companion and true friend, Doug Gavin, for his never-ending patience and understanding while I completed this thesis. Second, I thank my family, especially my mother, Jaquetta Thompson, and my father Arlen, for their fine examples of strength and their encouragement that kept me going. I am very proud of all my relatives. A special thank you also goes to Frank Leonard, "Uncle", for his financial contributions and the "roof over my head" throughout my educational career.

Many thanks also to my thesis committee chair, Dr. Gregory Campbell, for his full support of my endeavors and his attention to detail. Thanks also to my thesis committee members Dr. Thomas Foor and Rafael Chacon for their interest in this project.

This thesis would not have been possible without the assistance, interest, and expertise of many individuals. Thank you to Larry Loendorf and a very special thanks to Jim Keyser for welcoming me into the world of rock art research. Without Jim's assistance and contagious enthusiasm this thesis would not have come to fruition. Thanks to Paul Lawson, who informed me that in fact, a comparative collection of trade pigments did exist, and also generously shared documentation about trade pigments. I would also like to thank Carl Davis for his kindness and patience, his editing talents and advice throughout this project.

Finally, I wish to express my deep and sincere appreciation to the Broadwater County Museum, especially museum volunteer and avocational archaeologist Troy Helmick. I was fortunate enough to be in the "right place at the right time", and if not for Mr. Helmick I would not have "stumbled upon" the Deadmond bison robe nor had the fortune to study it. Museum President Rose Flynn was kind enough to allow me access to the Deadmond Bison Robe, and I thank her for her interest in the continued preservation of the piece. The list of thanks could go on. Many, many others helped me in some special way throughout the research, writing, and editing process. I will be forever grateful.

Table of Contents

Introduction		5
Chapter 1		
	Overview of Pictographic Art Research	8
	World Pictographic Art Method and Theory	9
Chapt	er 2	
	Cultural Context: The Artist's Society	24
	The Blackfeet Artist	25
	The Artist's Medium: Trade Paints	32
	The Artist's Medium, Post-Contact	33
	Pictographic Art in the 19 th Century	39
Chapt	er 3	
-	Methodology and Analysis of the Deadmond Bison Robe:	
	The Deadmond Bison Robe Background	43
	"Authentication," "Fakes,"	
	and the Reification of Scientific Dogma	46
	Pictographic Analysis of the Deadmond Bison Robe	51
Chapt	er 4	
-	Chronological and Cultural Context of the	
	Deadmond Bison Robe	60
	The Early Biographic Art Style	61
	Interpretation of the Deadmond Bison Robe	71
	Relative Dating: A Seriation Study of Blackfeet	
	Painted Hides	79
Conclusion		95
Appendix 1	Chemical Analysis of Common Trade Pigments	100
Appendix 2	The Collection	101
Bibliography		122

۰.

Introduction

Research Topic and Purpose

Pictographic art has the potential to provide insights into the recent past that cannot be gained from archaeological (material culture) records alone. Until recently, little systematic analysis and comparison of robe art and protohistoric-historic period rock has been undertaken, despite the interpretative potential they share as time counts, records of vision quests, and personal records or biographies. In the past, North American scholars have tended to separate studies of rock art motifs, decorated trade and utilitarian items, pottery design, and robe and ledger art into separate special interest topics. Many works rarely draw direct parallels between artistic designs of two or more forms of use.

Pictographic art represents on of the most expressive and aesthetic achievements among the original inhabitants of the Great Plains. A cultural phenomena spanning North and South America from Canada to the tip of South America, prehistoric indigenous peoples have inscribed figures onto stone, bone, hides, and other materials. This continued into the historic period and well into the modern era, conveying symbolic or ideographic meaning, communicating individual exploits, religious experiences, and historic events. In particular, the Biographic Art style of pictography has remained a cultural tradition within the Blackfeet culture of the Northern Plains of North America from the before the 18th century well into the twentieth century. A tradition is defined archaeologically as: "Lasting cultural phenomena that imply cultural continuity" (Fagan 1991). Rock art recorded at Writing-On-Stone, Alberta, Canada and throughout Montana, as well as painted bison robes, war shirts, and tipi covers illustrate that remnants of the Early Biographic Art Style of pictography enjoyed a type of popularity in figures that are definitively Blackfeet for a period of at least 150 years.

This thesis will demonstrate that the roots of this tradition in Blackfeet culture began with the Early Biographic Art Style of pictography exhibited in rock art, and extended into the historic era after the acquisition of the horse, and well into the twentieth century. Specifically, it focuses on bison robe pictography, an area of pictographic research that has great historic and prehistoric research potential. A previously undocumented bison robe, named the "Deadmond Bison Robe", located in the Broadwater County Museum, Townsend, Montana, is used as a vehicle to address the connectivity between bison robe art and prehistoric rock art. First, the theoretical background of rock art studies and other forms of pictographic art are discussed within the context of world-wide method and theory and its influence on North American research. Second, the cultural context of Blackfeet pictography is discussed in relation to the Deadmond Bison Robe, including its age, authenticity, and relationship to the Biographic Art Style of pictography. Issues relating to counterfeiting of American Indian art are also discussed.

Methodologically, this is accomplished through a functional analysis of hide paintings by: 1) Addressing the provenience and "authenticity" of the Deadmond Bison Robe; and 2) Relatively dating the Deadmond Bison Robe using seriation of examples from Blackfeet painted bison robes from collections now located around the world including France, Germany, Denmark, Canada, and the United States. This seriation will be one of the first attempting relatively date painted bison robes, in particular *only*

6

Blackfeet painted hides, and demonstrates that the Deadmond Bison Robe dates to the time period 1835-1890, with an approximate date of 1890.

Chapter 1

Overview of Pictographic Art Research

The early ethnographic literature and archaeological research briefly describes North American rock art, decorated bison robes, and other artistic forms of material culture. The last decade has witnessed significant expansion of rock art and related pictographic art research. Although John Ewers expressed deep interest in the subject in the early 1920s and 1930s, robe and ledger art studies in particular have only recently been the focus of researchers such as Barbeau (1960), Keyser (1979, 1984, 1987a, 1987b, 1989, 1996, 2000), Brownstone (1993), and others. The increased attention to bison robe art can be attributed to the recent advances in rock art research by Keyser, Loendorf (1984, 1985, 1990, 1991, 1992, 1994, 1998), (Connor and Connor 1971; 1980, 1984) and the new interest in historic ledger art (Peterson 1968, 1971; Rodee 1965; Penney 1989) which can be easily dated through accompanying literature and journals. Due to recent advances in chronomentric dating techniques, rock art research is beginning to spread beyond its traditional descriptive boundaries into theoretical, methodological, and topical relationships. Interest in bison robe pictography has been a logical outgrowth of these advancements.

This transformation has not, however, been without its periods of high points and low points. As recent rock art research can find its theoretical roots in European anthropology, bison robe research is informed, to a great extent, by the same theoretical standards as rock art studies. Periods of descriptive reports followed by incorporation of ethnographic comparisons and social anthropological theory seem to mark the entire last half of the century until the recent breakthroughs in method allowed rock art research to bridge the gap between anthropological theory and archaeology.

World Pictographic Art Method and Theory

Many rock art-related theories attempt to address the socio-religious aspects of art. One of the earliest theories regarding rock art, especially those early in this century related to Upper Paleolithic rock art, was the "Art for Art's Sake" theory, which ascribed no meaning to the painted images, other than simply "prehistoric doodling". This theory was replaced in 1903 by Salomon Renach, Henri Breuil, and others with the "Sympathetic Magic", or "Hunting Magic" theory, based on Australian rock art research and the fact that Australian rock art was often tied to Aboriginal magical and totemic rituals. Painting animals was seen as a magical way of capturing them, or increasing their numbers in order to insure more success in the hunt. Other scholars claimed the pictures were no more than a "grocery list" of game animals in the area at that time. The problems with these theories were that the paintings often did not match the evidence in the archaeological record of animals that were actually hunted or butchered. Claude Levi-Strauss observed this phenomenon in the San and Australian Aboriginal rock art, in that he believed that certain animals were depicted more frequently than others not because they were "good to eat", but were "good to think" (Leaky 1992, Shipman 1990), which nudged research one step further toward the true symbolic nature of much rock art.

Hunting Magic was the predominant theory until 1961, when Henri Breuil died. At this time, Andre Lerio-Gouran developed a theory based on structuralism, where a pattern was recognized instead of the randomness and chaos of earlier theories. He was the first to systematically look at the underlying structure in paintings, and his work reinforced the notion that the paintings were not just random doodles. He saw the paintings as a series of mythologic or symbolic depictions of how Paleolithic people saw their world. He interpreted the paintings as representational of the split between "maleness and femaleness" based on triangular shapes (vulvaforms) and represented by bison and aurochs which were sometimes juxtaposed by human female figures. Maleness was embodied by the horse and ibex, which were shown only with human male figures. His hypothesis was criticized as being "perspective sexomaniaque" and far-fetched. Eventually he played down some of the sexual interpretations (Shipman 1990).

The early "Art for Art's Sake" theory was recently revived by John Halverson (University of California, Santa Cruz), who views Upper Paleolithic rock art as "nothing but naturalistic, unmediated by cognitive reflection", showing no scenes and nothing that can be attributed to religion. Halverson feels the images are merely products of the "primal mind". However, the images depicted are not as simplistic as he implies. The perspective represented in Upper Paleolithic rock art is unmatched until the Renaissance era, much, much later in history. The Hunting Magic hypothesis was somewhat revived by David-Lewis Williams, a South African archaeologist. Both Breuil and Leroi-Gourhan had studied the many nonrepresentational, geometric designs amongst more realistic animal depictions. Breuil believed these designs were depictions of hunting paraphernalia such as traps, snares, and weapons. Leroi-Gourhan assigned maleness and femaleness to the designs- maleness represented by dots and strokes, femaleness by ovals, triangles, and quadrangles. However, to David Lewis-Williams, these geometric designs were a clear indication of shamanistic art.

Lewis-Williams has studied San art, including rock art, for over forty years. Early in his studies, San art was also regarded as simple representations of everyday life. His research, coupled with evidence from the ethnographic record and laboratory research, has shown that the geometric symbols may be images depicted by shamans after entering a state of hallucination. Called entopic images, these phenomena are products of the neural architecture of the human brain. Lewis-Williams believes Upper Paleolithic rock art fits his neuropsychological as well as San rock art does, especially based on the presence of therianthropes (transformational half-animal, half-human figures), monsters, realistic animals, and certain geometric designs commonly seen while in a "stage three hallucination" or trance state (Leaky :330-331; Lewis-Williams 1982, 1986, 1993).

According to Leaky, symbolic expression in art also indicates "people endowed with a fully modern, articulate, spoken language" (1992: 268). Artistic expression via pictographic art on rock walls appears fairly suddenly and recently- approximately 30,000 years ago in both Africa and Europe. Earlier, there are only "scattered indications of symbolic behavior" (Leaky 1992: 268) such as an engraved ox rib from the 300,000 year old site of Pech de l'Aze, France, and a sharpened piece of ochre dating to 250,000 years ago. Altimira was one of the first discoveries, stumbled upon by a hunter in 1868. The land owner only recovered a few stone tools from the cave, and it wasn't until 1879 that his young daughter discovered the paintings. The paintings in the small chamber were remarkably well-preserved, and consisted of two dozen bison grouped in a circle, two horses, a wolf, three boars, and three female deer. The paintings were executed in red, yellow, and black pigments. The landowner, Don Marcellion de Sautuola, later compared the pictographs from Altamira to engraved stones from the Upper Paleolithic, which scholars had long accepted as prehistoric. The engravings and the rock at were remarkably similar.

As is the case with most rock art discoveries and research, Altimira was first dismissed by experts, claiming that the style was far too "modern" and the paintings too "fresh" to have been either authentic or the works of "primitive" minds. One scholar even accused de Sautuola of fraud, and said the paintings were the works of an artist that had been staying with him. De Sautuola closed the cave in disgust, and it wasn't until almost twenty years later, long after his death, that the cave was accepted as authentic. Later, many similar finds finally convinced scholars of its authenticity, including one cave at La Mouthe which included a stone lamp that dated the site irrefutably to the Upper Paleolithic (Leaky 1992; Shipman 1990).

Probably some of the best-known Upper Paleolithic rock art are contained in the caves of Lascaux and Chauvet in France. Lascaux Cave is one of the more famous examples. It was discovered in 1940 by four French teenagers and dates to 17,000 years ago. Chauvet Cave was discovered in 1994 by three speleologists, Jean-Marie Chauvet (for whom the cave is named), Eliette Brunel-Deschamps, and Christian Hillaire, who were exploring the area. In 1995 three samples taken from charcoal drawings rendered AMS dates between 30,340 and 32,410 years ago, pushing the date of symbolic and \sim artistic expression back even further. In addition, soot from torches, superimposed on a calcite layer covering one of the drawings dated to 26,120 ± 400, proving that at least

some of the images were executed at very early dates (Clottes n.d.).

North American Pictographic Art Method and Theory

Early works by Maclean (1896), Mallery (1893), Boas (1927, 1964), Teit (1928), and others often made reference to pictograph and petroglyph sites in the western United States, however the focus of their work was mainly on other forms of artistic expression. This was due primarily to the fact that archaeological sites containing deposits of pottery, woodwork, antler, and bone with stylistic designs enabled the use of relative dating techniques. This could be brought together with ethnographic information to suggest function, cultural affiliation, societal structure, ritual and shamanistic practices and cognitive approaches to symbolism.

Some of the earliest references to rock art sites and ledger art can be found in the journals of early European settlers, military officers, and missionaries. The journals of Karl Bodmer, Prince Maximillian Weid, George Catlin, and Lewis and Clark make reference and exquisite drawings of bison robes, rock art, and other pictographic art as early as 1805. In 1805 Lewis and Clark collected a Mandan painted bison robe, now located in the Peabody Museum. Unfortunately, many other bison robes located in museums in France, Germany, Sweden, and Canada do not possess the definable collection dates or the provenance as the Lewis and Clark example. Bodmer and Catlin's works are so exquisitely detailed, and notes so carefully taken that examples from their travels in the 1830s are widely used as source materials by many anthropologists, and are considered valuable sources of ethnographic information.

The first impressions of these early explorers, as well as early anthropologists, was

that pictographic art- rock art, hide paintings, and other forms- is a type of written language that could be "read" per-se, as a simple means to convey deeds, religious experiences, traditions, and other culturally specific information. In 1833 Bodmer wrote "While waiting at Fort Union for the keelboat that was to take him on the last leg of his upstream journey, the prince purchased a painted Blackfoot buffalo hide...Illustrated here are the deeds of an outstanding warrior whom we recognize in each exploit by his long feather cap. In several places we may discern bullets flying around him... captured rifles, bows and arrows, scalps taken, and stolen horses are all represented."(Peoples of the First Man:17).

Well over one hundred years ago, Henry Schoolcraft developed a model of the evolution of picture-writing which he felt followed the unilinear sequence of: Representative figure-ideographic symbol-phonetic sign-alphabetical symbol (Eastwood 1974), in which he clearly viewed pictographic art as a "lower stage" of writing and speech, one he obviously felt would inevitably lead to a fully developed writing system approaching European standards. By the late 1800s Colonel Garrick Mallery published a large volume in the Bureau of American Ethnology Report entitled "Pictographs of the North American Indians" (Mallery 1972). Intended mainly for the study of sign language and ledger art, Mallery's work was primarily responsible for stimulating scholarly and popular interest in rock art. Mallery associated sign language with a lower stage of evolution, and thus the invention of writing caused peoples of North America to "talk as they write" after the "invention of writing." (Baynton 1996).

Mallery's 1893 publication further expressed a unilinear evolutionary view

prevalent among anthropologists of the time, as shown in his comment:

"Picture-writing is a mode of expressing thoughts or noting facts by marks which at first were confined to the portrayal of natural or artificial objects. It is one distinctive form of thought-writing without reference to sound, gesture language being the other and probably earlier form. Whether remaining purely ideograhic, or having become conventional, picture-writing is the direct and durable expression of ideas of which gesture language gives the transient expression." (In Oklahoma Historical Society State Museum, n.d.)

John Maclean also indicated these ideas about native pictography in 1894. Like others, he viewed pictographic art as a form of writing, easily "read" or understood by natives and non-natives alike. Maclean noted that "When Marquette and his companions went down the Mississippi a pictograph was seen which filled the Indians with awe, and they told him that this rock-inscription represented a story, which was 'that a demon haunted the river at this place... that the waters were full of frightful monsters who would devour them in their canoe..." Maclean also noted that his own native informants, Henry Shoecat and Jerry Potts, made mention of rock art located at what is now Writing On Stone, Alberta, Canada, and pictographs near Helena, Montana that are war party records of Blood and Piegan. Additionally, Maclean collected a bison robe depicting the "Life of Many Shots", and made notes on the full translation of the robe by native informants.

Mallery's, Schoolcraft's, and Maclean's ideas reflected those of many other anthropologists of the time, including Franz Boas. Although Boas tool a less "staunch" evolutionary view of pictographic art, and diverged from the purely unilineal scheme of "talk-writing" or "thought-writing", much anthropological theory relating to art during Boas' time focused on the "cognitive perceptions of the primitive". Here, art was seen as an evolving tradition which oscillated between purely "aesthetic representation" or "functional" (Boas 1927). Boas regarded the use of art, and pictographic rock art (p.15) as an "aesthetic need", as based on direct questioning of aboriginal informants and their criticism of their own work, showing "appreciation of technical perfection".

Although Boas felt that art form could not be judged or valued by an anthropologist based on the possible "emotive state of the artist (p, 13), he still posed the question, as did many other anthropologists of the time: "Is 'primitive' art the expression of definite ideas?" The idea at the time was that if we attempt to "get inside the mind of the primitive," we will know how the mind functions in all of humanity. Boas also suggested that (art) form was bound with technical experience (p. 11), and intimated that there was a "close connection with industriousness and artistic activity," in which ornamental art developed in those societies of which "greatest skill is attained" (p.19). He correlated this with the differing sexual division of labor among many tribes; for example, in societies with "high industriousness among women", women produced the most aesthetically pleasing artworks, inversely so for societies showing "high industriousness among men". Art forms containing "simple dots and course lines," such as in the case of some from the Tierra del Fuego, he felt demonstrated the artist may "lack some skill". This exemplifies early approaches to art, including rock art, as a purely aesthetic, lessthan-functional activity. Many anthropologists of the time, informed mainly by the kuniforms and hieroglyphics of the middle east, and making their conclusions from within the rubric of the Western aesthetic, still regarded North American rock art as a type

"primitive, pictorial form of writing".

The first detailed article on a Montana rock art site was published in 1908 in the Biological Series Bulletin of the University of Montana and describes a painted bluff along Flathead Lake (Elrod 1908), however the article was not widely distributed (Greer and Greer 1998). A few other minor references to individual sites show that rock art continued to receive minimal attention in Montana during the first part of the twentieth century. During the WPA era, several Montana caves were the focus of excavations, including Pictograph Cave, near Billings, and Point of Rocks Cave, near Whitehall, Montana. But the focus of this time was not on rock art, but rather the archaeological and paleontological deposits at the base of the rock art. In 1936, rock art recording was carried out at Lookout Cave, southwest of Malta, Montana by a local archaeological society.

During the 1940s, Smithsonian River Basin surveys were taking place in Montana, and archaeologists such as Hughes and Bliss made brief recordings of rock art sites, including the Hellgate Gulch pictographs near Helena, Montana, and the first recording of rock art located in Pictograph Cave. During the 1950s, Carling Malouf continued his research on several well-known rock art sites in central and western Montana. He included portions of this research in his 1956 dissertation, and although rock art was not the primary focus of his dissertation, he diverged from the primarily descriptive nature of rock art research and developed the first classification system for rock art in the region (Malouf 1961, 1956, 1953, 1950; Malouf and White 1953; Greer and Greer 1998).

As late as 1968 Dunn (p. 17) remarked that pictography, in some instances was

"approaching writing and was used to a certain extent in communication... But the main purpose of the art, apparently, remained one of magic symbolism, of totemic meaning, or, of religious significance." David W. Penny went beyond Dunn's description to address the metaphorical nature of pictographic art: "All languages employ metonym and metaphor to reveal or conceal meanings, to amplify or extend, to specify or generalize, depending on the context and purpose of usual communication." (Penney 1989).

But as Whitley and Loendorf (1994) have noted, it was Mallery's approach that most likely continued to influence rock art studies throughout most of this century. Since a formal evolutionary approach was at odds with theoretical trends in archaeology as a whole, his work helped lead to the marginalization of rock art research. Archaeology basically followed the general trends that occurred in anthropological theory at the time, however archaeology responded to the positivist approach by incorporating principles of stratigraphy, uniformitarianism, Darwinian biological evolutionism, and cultural evolutionism.

Julian Steward adopted Mallery's formal and classificatory approach in his rock art studies in the west, and shunned the use of ethnographic information as "speculative", later rescinding this statement and reintroducing evolution in his later work (Callahan 1999). In the 1960s Heizer and Baumhoff adopted a social evolutionary view to rock art based on studies from France, in which style and form followed a trajectory form simple to complex (Heizer 1962; Callahan 1999). Heizer and Baumhoff also reintroduced the term "hunting magic" relating to rock art sites, a term later rejected because faunal remains recovered from the sites could not have been used as food. However, ideas relating to magic and shamanistic ideas were not thrown out altogether. David Lewis-Williams and Thomas Dowson's (1998) research introduced the concept of the "neurophsychological model". According to Callahan (1999), this is essentially an ethnographically informed "middle range theory", borrowed from South African research. This model was applied to Upper Paleolithic rock art; Whitley later modified and applied it to American Rock Art studies.

As traditional approaches to rock art studies in the past focused on classificatory schemes on the basis of style, distribution, and color, Whitley believes that the interpretation of style has been taken as far as it can possibly go. He feels this is problematic because stylistic analysis and seriation have effectively produced a view that each and every style is culturally unique and chronologically specific, a view that is ethnographically impossible (Anonymous 1996). However, I disagree with this viewpoint, as stylistic analysis is but one piece of the puzzle. Historic and ethnographic literature, chronometric dating, seriation, and pigment analysis can be used together to form a more complete and accurate assessment of pictographic art and other decorated items of material culture. As this thesis will show, seriation is both a powerful and important tool when other methods are neither feasible nor can be realistically or monitarily accessible. Whitley may feel that stylistic analysis could box an artistic style into only one cultural category in both time and space, but on the other side of the argument, the neuropsychological model can neither explain every rock art site, nor can it be used to accurately describe more secular pictographic works, such as Biographic art. Whitley has recently collaborated with one of many researchers using the ethnographic method, Larry

Loendorf (Whitley and Loendorf 1994), who was the first to bring absolute dating to Montana rock art (Greer and Greer 1998).

Beginning his research in Montana during the 1970s, Loendorf has demonstrated that the study of rock art, use of traditional archaeological methods, and ethnology should not be separated (Loendorf 1994, 1990,1992). He has conducted excavations below rock art panels to acquire data on materials used to make the rock art as well as to date it, used experimental archaeology to create both pictographs and petroglyphs, and used pollen analysis together with rock art and ethnographic information to suggest site function and cultural affiliation for many sites (Greer 1998; Loendorf 1998, 1990, 1992; 1985, 1984). In his paper titled *'Thrown Behind the Tipi Lining' is Found Among the Stars* (1998), Loendorf uses a combination of in-depth research of oral traditions, ethnographic literature in reference to rock art, and ledger book drawings to correlate Hidatsa oral traditions with a rock art site located in the eastern portion of Montana and on Crow Indian war shields.

Along with Jim Keyser and Michael Klassen, Loendorf has used ethnographic information in rock art studies to not only demonstrate cultural continuity in many regions, but to also dispel many widely held misconceptions about site function and use by contemporary indigenous groups. These researcher's recent work on Writing On Stone, Alberta, demonstrates persistent use of rock art well into the twentieth century (Klassen 1998, 2000). The recent discovery of photographs and a narrative of a 1924 trip by an amateur ethnographer demonstrates that a well-known historic petroglyph at Writing-On-Stone was carved by the Piegan elder as part of the Biographic rock art tradition. Once disregarded by anthropologists as historic "graffiti" of (most-likely non-aboriginal) tourists and vandals, the discovery of the elder's work at Writing-On-Stone not only supports the use of stylistic criteria to identify cultural affiliation in pictographic art (Klassen, et al 2000), but also demonstrates the persistent tradition of the Biographic Art Style and dispels the notions of rock art as something belonging in the "primitive past".

James D. Keyser is also at the forefront of both rock art and painted bison robe research. Again, during the 1970s Jim Keyser began recording and writing about rock art in Alberta and Montana (Keyser 1975, 1976, 1977a, 1977b, 1979). Like Stu Conner, another avid and respected rock art enthusiast who wrote the text for the first book exclusively about Montana rock art (1971, and, who incidently was also the first to show interest in the Deadmond Bison Robe), Keyser was concerned with regional forms of rock art and emphasized stylistic classifications. Keyser's Northern Plains work in the 1980s (1984, 1987a, 1987b, 1989) turned to ledger art and painted bison robes and their relationship to rock art, and he has successfully used the direct historical approach to work back in time from these ledger and robe sources to interpret many Protohistoric and early Historic Northern Plains rock art (1987a, 1989, 1991, 1993, 1996; Klassen 1998, 2000; Greer and Greer 1998).

Recently, a more feminist approach to rock art studies was taken by Linea Sundstrom (1998, 1987). In her 1998 Plains Conference presentation, Sundstrom describes early rock art in the Black Hills and North Cave Hills of South Dakota contains references to gender. Many demonstrate gender-specific roles of rock art ad evidenced by representations of gender in human forms as well as free-standing female genitalia and phallic motifs. According to Sundstrom, the occurrence of gender signs in the context of early hunting scenes suggests that both women and men were considered important to the success of the hunt. This can be seen expressed in later rock art in which female genitalia, animal tracks, and abraded grooves (women's sewing awl marks) co-occur. Sundstrom points out that archaeological and ethnographic evidence raises the possibility that at least some of the rock art was produced by women or girls, many of the abraded grooves left by sharpening sewing awls often during puberty and hunting rites.

Obviously moving away from its traditional boundaries of descriptive reporting, theoretical misnomers such as "art for art's sake", and misguided unilineal evolutionary schemes, American and world-wide pictographic art research has itself evolved into a theoretically vigorous sub-discipline of archaeology, guided and informed by current anthropological theory. As American anthropological theory, in general, has been influenced by European studies so has this led to a current dialog between European rock art researchers and American researchers. This dialog is presently ongoing. David-Lewis Williams and Thomas Dowson have greatly influenced other contemporary researchers such as Callahan, Whitley, Loendorf, and others. Several significant Upper Paleolithic caves discovered in southern France within the past few years, including Cosquer and Chauvet have been AMS dated by Jean Clottes to verify the age of the caves and to refute that the paintings were counterfeit. Similarly, Klassen, Keyser, and Loendorf used ethnographic research and the direct historical approach, and Loendorf chronometric dating techniques to refute such counterfeiting claims, to demonstrate cultural affiliation of rock art sites, and to demonstrate persistent traditions in rock art already shown through

stylistic analysis.

Although rock art research has become a sub-discipline of archaeology only fairly recently, it too has followed the various stages in development of anthropological theory as a whole. Tied closely in a pan-theoristic way to investigations of the development of art and writing early on, investigations of pictographic art have also become included in the contemporary and postmodernist movement. From the early evolutionism of Mallery and Kroeber (and others) to feminist studies of Linea Sundstrom, pictographic research has added insight to broad aspects of cultural and socio-anthropological theory.

Callahan points out (rightly so) that ethnographic analogy is unavoidable. Refusal to use ethnographic analogy and the direct historical method only forces researchers to fall back on unacknowledged Western notions of art, which generally leads to unacknowledged and archaic notions about the artists themselves (1998, 1999). Combined with current breakthroughs in chronometric dating of rock art, ethnographic research, and archaeological methods, multiple analogies that will build upon each other will help piece together more complex hypotheses to account for artistic development of mankind. These interdisciplinary approaches will also produce consistent, quantifiable data to help illuminate the diversity, historical relevance, and human universals to what philosophers call strong relations of relevance.

23

Chapter 2

Cultural Context: The Artist's Society

When anthropologists began the first serious study of American Indian peoples, they devised the concept of culture areas in order to define and group segments of a population (Lessard 1990), and found that culture areas were based on two basic traits: ecological parameters and shared cultural traits. The Great Plains covers an enormous area of North America, from the Rocky Mountains in the west to the Eastern Woodlands near the Mississippi River. The Plains are a "grass sea" (Schlesier 1994; Fagan 1991) that covers about a half-billion acres from Canada in the north to Mexico's Rio Grande in the south. Topographically moderate to low, with relatively little rainfall, they are a harsh place to live. Plains Indians could be loosely defined as nomadic, mounted, buffalo hunting tipi dwellers whose main religious activities were the Vision Quest and the Sun Dance. Their main decorative arts were painting, quilling, and beadwork. Unlike other culture areas, most pottery, basketry, and weaving were basically absent in Plains culture.

During the 19th century, 27 tribes of horse-mounted tribes dominated the Great Plains. All of them were either nomadic bison hunters subsisting almost entirely off Plains game herds, or were semi-nomadic farmers who relied upon crops for a substantial part of their diet. All groups were biologically and linguistically diverse, but they shared a common horse-based culture that valued bravery in war and ardent militarism.

Pictographic art represents one of the most expressive and aesthetic achievements among Plains peoples. This functional art reached its fullest expression during the 18th and 19th centuries, coinciding with the High Plains Horse Culture of that period (Trottier n.d.). European contact changed the roles, function, and media of indigenous art. European artists such as Bodmer, Catlin, and others became a major influence on indigenous artists; both traveled among many varied tribes in the early 1800s, painting their portraits and writing of their encounters. Contact with European artists and the white culture as a whole, led to more formalized realism that is evident in rock art and other indigenous art forms at the time of contact.

The Blackfeet Artist

The Blackfeet Indians of the United States and Canada were divided into three main groups: the Northern Blackfeet or Siksika, the Kainah or Blood, and the Piegan or Pikuni. The three as a whole are also referred to as the Siksika (Blackfeet Proper), a term which probably derived from the discoloration of moccasins with ashes (Mooney 1910). The terms *Blackfeet* and *Blackfoot* are often used interchangeably, denoting the preferred pronunciation in the United States *Blackfeet*, and the preferred Canadian pronunciation, *Blackfoot*. The three groups constituted what were apparently geographical-linguistic groups. All three spoke a language which was a part of the Algonquian family. According to Wissler (1911), the Piegan and Blood were the most closely related dialects.

Before the Blackfeet were forced to reservations in the latter half of the nineteenth century, they occupied a large territory which stretched from the North Saskatchewan River in Canada to the Missouri River in Montana, and from long. 105 degrees W to the base of the Rocky Mountains. The Piegan were located toward the western part of this territory, in the mountainous country. The Blood were located to the northeast of the Piegan, and the Northern Blackfeet were northeast of the Blood. The Blackfeet were placed on four reservations: the Blackfoot Agency (Montana), the Blood Agency, and the Piegan Agency (Alberta, Canada). Mooney accepts the estimate of Mackenzie that in 1790 there were approximately 9,000 Blackfeet. According to Ewers, however, in 1832 Catlin estimated that the Blackfoot numbered 16,500, and in 1833 Prince Maximilian gave an estimate of 18,000 to 20,000 (Ewers 1958: 60). During the nineteenth century, there were repeated epidemics of smallpox and measles which decimated one third of the Blackfeet and Gros Ventre tribes (Dempsey 1965; Ewers 1997; Mooney 1910). In 1909 the Blackfeet numbered only 4,635 (Mooney 1910; Ewers 1997). Evidence indicates that the Piegan were always the largest of the three groups. In 1960, the tribal enrollment was 8,456, and 4,850 of these lived on the Blackfeet Reservation in Montana (McFee, 1968). There are now 14,700 members of the Blackfeet tribe, with the population of the Montana reservation approximately 9,000 (Spoonhunter 2001).

Although Mooney refers to the three groups as a confederacy, there was no political structure which would warrant such a term. The three had a very ambiguous sense of unity. The only times they gathered together were for ceremonial purposes (Martin n.d.). The term confederacy may refer to the Blackfeet Alliance, the core tribes of which included the Piegan, Blood, and North Blackfeet (Siksika), who shared a common language and customs and were often referred to collectively as the Blackfeet. These tribes moved westward and then southward during the eighteenth century, and in doing so displaced the Kootenai, Flathead, and part of the Shoshone from lands near the Rockies in southern Alberta and northern Montana. Their alliance, at the height of its power in the first half of the nineteenth century, also included the Sarcee and the Gros Ventres (Atsina) (Ewers 1997).

The Blackfeet were typical of Plains Indians in many aspects of their culture. They were nomadic hunter-gatherers who lived in tipis. They subsisted mainly on buffalo and large mammals and, in addition, gathered a lot of vegetable foods. Traditions indicate that

26

the buffalo were hunted in drives, although hunting patterns changed when horses and guns were introduced. Deer and smaller game were caught with snares. Fish, although abundant, were eaten only in times of dire necessity and after the disappearance of the buffalo. During the summer, the Blackfeet lived in large camps. It was during this season that they hunted buffalos and engaged in ceremonies such as the Sun Dance. During the winter, they separated into bands of from approximately 10 to 20 lodges (Martin n.d.).

For each of the three geographical-linguistic groups, the Blood, the Piegan, and the Northern Blackfoot, there was a head chief. His office was slightly more formalized than that of the band headman. The primary function of the chief was to call councils to discuss affairs of interest to the group as a whole. When the bands congregated during the summer, they formed distinct camps which were separated by a stream or some natural boundary when available. When the Piegan, Blood, and Northern Blackfoot joined together for ceremonial purposes, each one of the three camped in a circle. Like other Plains Indian cultures, the Blackfoot had age-graded men's societies. Prince Maximilian counted seven of these societies in 1833. The first one in the series was the Mosquito society, and the last one was the Bull society. Membership was purchased. Each society had its own distinctive songs, dances, and regalia, and their responsibilities included keeping order in the camp (Martin n.d.). There was one women's society.

The religious life of the Blackfoot centered upon medicine bundles and their associated rituals. These bundles were individually owned and ultimately originated from an encounter with a supernatural spirit. These encounters took the form of dreams or visions, which were sought in a typical Plains type of vision quest. A young man, often under the tutelage of an older medicine man, would go out to some lonely place and fast until he had a vision. Many of these men failed and never had a vision (Wissler 1912; Ewers 1955; Martin n.d.). In this case, they would buy a bundle and its ritual. Wissler

27

(1912) points out that a man of some importance was expected to have had a vision experience. Individual bundles acquired great respect, especially those associated with success in war. Some of these were headdresses, shirts, shields, knives, and lances. Painted lodges were considered to be medicine bundles, and there were more than 50 of them among the three main Blackfoot groups.

The most important bundles to the group as a whole were the beaver bundles, the medicine pipe bundles, and the Sun Dance bundle. Since the Sun Dance was not mentioned by the eighteenth-century explorers, Ewers feels that it was an early nineteenth-century innovation among the Blackfoot (Ewers 1958). By the middle of the nineteenth century, the Sun Dance had become an important ceremony performed once each summer. The Sun Dance among the Blackfoot was generally similar to the ceremony that was performed in other Plains societies. There were some differences, in that a woman played the leading role among the Blackfoot, and the symbolism and paraphernalia used were derived from the beaver bundle ceremony. The Blackfoot Sun Dance included the following: (1) moving the camp on four successive days; (2) on the fifth day, building the medicine lodge, transferring bundles to the medicine woman, and the offering of gifts by children and adults in ill health; (3) on the sixth day, dancing toward the sun, blowing eagle-bone whistles, and piercing; and (4) on the remaining four days, performing various ceremonies of the men's societies (Martin n.d.).

During the 19th century, the Blackfeet were considered to be one of the most warlike nations in North America. The introduction of horses and guns in the early 18th century into Plains Indian culture intensified tribal conflicts. War, with its associated ceremonies, became an important facet of Plains culture and acted as a power unifying force within the tribal organization (Brownstone 1993). By the 19th century, the Blackfeet had a well-defined war complex, however extermination of their enemies was not and accepted practice, and from a European perspective probably seemed more like competitive sport (Dempsey 1993; Brownstone 1993) (this does not imply that the Blackfeet were all about peace and did not actually kill their enemies, simply that this sort of act did not rank as high as other acts meant to prove bravery in the face of the enemy). Instead, War parties consisted of loosely and hastily organized groups whose goals were to capture enemy horses, women, and to count coup by touching the enemy, stealing the enemy's weapon(s), and other various ways of obtaining war honors. This system of "graded war-honors" were often recorded or registered. War exploits became the most prominent subject of Blackfeet pictographic art (Smith 1938; Wissler 1911; Mallery 1972; Keyser 2000, 1996, 1993, 1991, 1987a, 1979; Horse Capture 1993; Brownstone 1993 ; Ewers 1939, 1958, 1968, 1981a, 1983, 1985, 1992, 1997; Barbeau 1960).

Sometimes referred to as "picture writing, war exploits were recorded on hide shirts, outer walls of tipis and tipi liners, rock faces, and on skin robes. The paintings advertised to all the warriors deeds and status. (Ewers 1983, 1997). Warriors were often called upon to give detailed accounts of their deeds in social and public situations such as pipe ceremonies, Sun Dance, and naming ceremonies (MacLean 1894; Grinnell 1926; Wissler 1912; Wissler 1911; Brownstone 1993; Dempsey 1993). The warrior ethic began at birth and continued throughout life. When a male child was born he was given a name which he kept until adolescence, when he was expected to go to war and earn a man's name. When a female child was born, the name giver often drew upon his own war exploits and it was not uncommon for women to have names such as "Good Killer", "Double Gun Woman", or "Counting Coups on Both Sides" (Dempsey 1993).

In the Blackfeet language, *sinaksin* "made marks" is a term used to signify either a drawing or a writing; the Blackfeet greatly admired the works of Karl Bodmer and told German Prince Maximillian Weid that they thought Bodmer could "write very correctly".

(Ewers 1983, 1997). Though the Blackfeet admired Bodmer's works, his influence was not as great on the Blackfeet artistic style as it obviously was in other Plains tribes. The Blackfeet "never really got into realism" (Keyser, personal communication 2000), and were more concerned with communicating knowledge of a wearer's war record than in picturing horses and humans accurately, a "pictorial shorthand" as Ewers calls the style (1983:52).

Humans were usually featureless with a knob-like head connected by a thick straight line to a geometric torso. Humans depicted in the early v-necked style were generally "stockier, less mobile" as compared to v-necked figures of other tribal affiliation, such as the Crow, which exhibited an "elongated, ballet-like quality" (Brownstone: 16). Arms and legs were not considered essential to the artwork, and sometimes were omitted from the figure. Horses were drawn simply in profile (Ewers 1983) with the legs usually beginning as triangular shapes at the body and thinning to a single line. Riders are rendered either with no legs or with both legs on the same side of the horse. Horses captured could also indicated by either open rectangles (this could also denote the subject as the leader of a war party) or crescent shaped hook designs representing hooves. The depiction of a special "horse medicine bundle", known as "a thing to tie on the halter", specifically the type having a long horizontal bar with feathers or other regalia pendant from the horse's jaw, is almost strictly Blackfeet in origin and known exclusively in rock art (Keyser 1995, 1991, 2000; Wissler 1912; Ewers 1955) save for two painted bison robes: The Shorty Whitegrass/Sharp robe (Ewers 1983; Keyser 2000) and the Deadmond Bison robe.

The cutting of a horse picket in horse capturing scenes (a high grade of honor), as well as realistically depicted pickets and brush covered or dug-out rifle pit stockades were unique features in Blackfeet stylization. Crescent shapes attached at the bottom to a zig-

30

zag line represented a detail as a scout while accompanying a war party (Wissler 1911). Since items of material culture captured from the enemy were considered proof of brave deeds, these items were also included in pictorial accounts. They are rendered in much detail as to distinguish pipe bags, parfleches and other bags either fringed or with out fringes, bows, quivers with carrying straps, hatchets, feathered staffs or coup sticks, lances, powder horns, and guns (Ewers 1983; Keyser 1977a, 1979, 1987a, 1989, 1991, 1993, 1996, 2000; Wissler 1911, 1912, 1916). In connection with the Blackfeet and Crow, Catlin noted and sketched "curious appendages to the persons or wardrobes of an Indian...sometimes made of the skin of an otter, a beaver... sometimes the skin of an animal so large as a wolf" (Catlin 1876:37, pls. 14, 18-19. cf. Brownstone 1993). Brownstone (1993) cites several examples of this type of war medicine, and has been able to locate only a few non-Blackfeet paintings depicting this type of skin decoration.

"Capture hands" were used to signify either capturing or counting coup on an enemy, and often were depicted as either "floating weapons", "floating hands", or by a very long, outstretched arm which either comes near or touches another human figure (Keyser 1979, 1987a, 1987b, 1989, 1991, 1993, 1996, 2000, personal communication 2000). When the hands were depicted as floating hands, they were often three to fivefingered representations (I have noticed that the five-fingered, up-turned rake like hands appear on earlier painted hides, while the three-fingered version seems to appear on later ones). Additionally, "rub-outs" are shown, but are less common (although one appears on the Deadmond piece). Rub-outs are a way of indicating that a person was killed (Keyser, personal communication), and is shown by a diagonal line or rectangle draw across the figure from the upper to the lower torso. Reportedly, Bird Rattle may have made a rubout when visiting Writing-On-Stone in 1924 (Klassen 2000).

As a Northern Plains tribe associated with the High Plains Horse Culture leading a

nomadic or semi-nomadic, war-based lifestyle on the Plains much like other Plains Indian Tribes, the Black feet can be differentiated by their system of graded war honors, the fact that European contact did not produce the levels of realism in artworks of other tribes, and that several stylistic techniques in hide paintings, war shirts, and tipi covers can be attributed to Blackfeet artists. Wissler (1911:42) also notes that the Blackfeet seemed to have a unique style, and he mentions the absence of certain types of ceremonial art representative of other tribes such as many Central Algonkin tribes and the Dakota. The Deadmond Bison Robe contains nearly all of the definitively Blackfeet symbols noted above by Wissler, Ewers, Keyser, and Brownstone. It is within this setting that the Deadmond Bison Robe can be inferred to have a Blackfeet origin.

The Artist's Medium: Trade Paints

Pictographic art represents one of the most expressive and aesthetic achievements among Plains peoples. This functional art reached its fullest expression during the 18th and 19th centuries, coinciding with the High Plains Horse Culture of that period (Trottier n.d.). European contact changed the roles, function, and media of indigenous art. European artists such as Bodmer, Catlin, and others became a major influence on indigenous artists; both traveled among many varied tribes in the early 1800s, painting their portraits and writing of their encounters. Contact with European artists and the white culture as a whole, led to more formalized realism that is evident in rock art and other indigenous art forms at the time of contact.

New media, such as muslin, canvas, paper, ledger books, and commissary books became an addition to the native substrates once used such as animal hides, rawhide, and rock surfaces. In addition to these new "canvasses", new paints were also introduced by European explorers, traders, and missionaries. Early indigenous peoples were ingenious in developing several earths and other natural products as sources of pigments for face painting and artwork. However, the preparation of those pigments was often a slow process and at certain times of the year it was impossible to find the materials. Most of the natural pigments were also fairly muted colors of dull red, tan, and brown. Other natural pigments such as berry and plant juices, animal blood, and even bison gall stones were often ground or mixed with animal fat binders to produce varying paint colors of purple, blue, red, yellow, green, and brown (Hanson 1981, 1971; Mails 1972; Phillips 1995). However, aside from being fairly muted, these natural pigments also often did not hold their fresh color, and faded out considerably over time.

The Artist's Medium-Post Contact

For these reasons native peoples came to rely upon a more constant supply of more brilliant colors from traders. In their studies of the Omaha tribe, Fletcher and La Flesche remark that pigment was sold in small packages about the size of a package of sewing needles, and that "the price of one of those packages in the last century was the value of twenty-five cents...Great quantities of paint were sold, this article alone yielding a large profit to the trader." They also note that the Omaha bought red, green, blue, and yellow paint (Hanson 1981).

Trade pigments were an extremely important item of trade for early explorers, traders, and trappers. Mark-up on the small packages, which were shipped in considerable quantity, was enormous-nearly as profitable to the traders as whiskey, and just as important (although seldom researched) a trade item. Little packages of paint became the universally accepted Indian present, usually meant to make some proposed transaction more acceptable to the customer, and was carried by nearly every frontiersman, especially as a present to entice young Indian women in the villages they visited. (Morgan 1964; Hanson 1981, 1971; Mails, 1972). Trade pigments were highly prized by and sought after by Indian peoples, as the following references will show.

In the 1860s, George Beldon remarked of Sioux Indian paints:

"... The paints used by Indians in ornamenting arrows are purchased from traders. It is put up in small packages, and sold at 500 percent above cost. Of late years, there has been a house in St. Louis that has made a specialty of Indian paints, and every Indian tribe on the plains knows their brand. These paints are indelible and excellent, the Indians being willing to pay any price for them. Generally, imitation of Chinese vermilion, yellow and green chromes, indigo, lamp black, and ink are sold to the savages for paints." (Morgan 1964; Hanson 1981).

The following are descriptions and references to some of the commercial pigments available at the time of European contact:

Vermilion (Red):

Vermilion, made from mercury ore¹, was the standard red pigment for two and a half centuries. It was sold or traded at nearly every fort, trade post, and even given as gifts and treaty payments. Indigenous peoples used vermilion for face paint, dye², and paint for artworks. A brilliant red, it could be rubbed into buckskin or human skin. For face and body paint it was mixed with water or with grease. When used on robes or wooden objects, more permanent vehicles (binders) were used. The Kiowa used the sticky juice of the prickly pear, and the Arikara are reported to have used a thin mucilage prepared by boiling a beaver's tail. Red was a popular color among indigenous peoples, and sacred to many. When Captain Clark wrote his work on Sign Language in 1885 he mentioned that the general sign for "red" was a motion of the right hand to simulate painting one's cheek. According to Hanson, "No other color has that distinction" (Hanson 1971).

Vermilion appears very early in the lists of Colonial trade goods, some of which call it "cinnabar", a name commonly used in reference to the Asian trade. It is mentioned

as early as 1684 in Hudson's Bay Company shipment records. In 1687 Governor Dungan of New York reported that Indian trade goods regularly going up the Hudson River included vermilion. When Governor Fletcher held council with the sachems of the Five Nations at Albany in September 1696 he reported an extensive list of presents them which included six pounds of vermillion (Hanson 1971, 1981).

By 1812 the Office of Indian trade was buying "China vermilion in small papers", which was the type of packing most familiar. These small papers, stamped on both sides with Chinese characters, were packed into kegs for shipping. The Chinese produced the most mercury used in the manufacture of Chinese vermilion, which was of unequaled quality and the recognized standard until the end of the fur trade era. In the early nineteenth century various American chemical firms offered their domestic brands of vermilion as a substitute for the Chinese vermilion. In 1817 the U.S. Superintendent of Indian Trade wrote to a Mr. G. Hunt of New York: "The sample... appears tome to be equal to the English. But our Indians having very keen perceptions in the article of Vermilion, and having been accustomed to use the Chinese, I do not know how this grade would take... The time will come when you will have arrived at similar perfection with these ancient people (the Chinese)." (Hansen p.2). The American Fur Company also tried some of the domestic brand in 1839, and sent a note with the St. Louis shipment "We will be glad to learn that the Box of American vermilion has reached you and will supply the place of Chinese V. which is now very scarce and held at \$2.50 per pound." Again, this vermilion obviously didn't suit Indian customers, because the following March they were "glad to learn that a quantity had just arrived from Canton at \$2.00 per pound (Hanson 1971). Vermilion continued to be listed as trade goods or as Indian presents for at least another 175 years.

Other references to red pigments are scattered among many trade journals and

ledgers. Hudson's Bay Company invoices to America in the early 18th century includes red lead, which was most likely used for oil paint at the outposts, but one shipment of fifty-six pounds was included for shipment to Churchill River in 1725. Another reference from England to Albany Fort listed red ochre in lumps and packed in a box in 1751 (Hanson 1981).

Cochineal, a tropical insect which was crushed to provide carmine, a scarlet dye, is mentioned several times in trade accounts, but Hanson (Hanson 1981) assumes it was used for quill dyeing (p.5) because it could not be used as a pigment with out extensive processing. He also notes that cochineal was sold at Ashley's rendevous in 1825, and the Peace Commission bought it as Indian gifts at \$11.25 for five pounds. This same account lists "chrome vermilion" among the trade items, which Hanson believes may have been what was referred to as "American vermilion" and which "the Indians seemed not to care for particularly" (p.5).

Yellow:

Natural yellow pigments could be found all over America, including a moss in the North and numerous clays and natural ochers. Less easily obtained, raiding parties would often chance entering into enemy territory in order obtain the pigment from scattered sources (this is also true for white pigment) (Mails 1972). Yellow pigment is seldom mentioned in early trade lists, however the case may be yellow and other colors are simply overshadowed by references to the ever-popular vermilion.

The mineral called yellow ochre was a common paint pigment (still in use today), and did find its way onto the plains. Edw. Brooks was advertising a number of paints in oil, including yellow ochre, in the St. Louis Republican, and the Swiss artist Rudolph Kurz found some to use at Fort Union in 1851. In 1852 Kurz found an extensive Indian sketch on a cottonwood tree executed in vermilion and chrome yellow (according to Hanson, Kurz was an experienced artist and these notes are reliable since he most likely made the proper identification of the pigments). American traders introduced "chrome yellow" (chromate of lead- Chromium was discovered in 1797 but was not used as a metal for over one hundred years) to the Plains in the first half of the nineteenth century (Hanson 1981).

Chrome yellow is a brilliant yellow paint that is fairly permanent. Pierre Chouteau Jr. and Co. acquired a trader's inventory which included chrome yellow (and chrome green) in 1854, and there are constant references to both chrome yellow and chrome green in trade correspondence after 1850. It was distributed by the Peace Commission in 1868, and Indian depredation claims filed in 1865 by Geminien Beauvais, a trader from the Ft. Laramie area, included eighteen pounds of chrome yellow. Others list "losing 20 pounds of chrome yellow and vermilion to the Minneconjou on Powder River", and Indians from the Red Cloud Agency specifically requested that their annuity goods include fifty pounds of chrome yellow and 800 papers of vermillion in 1874 (Hanson 1981).

Green:

References to chrome green can be found with references to chrome yellow, above, however, one of the most popular types of green pigment was verdigris, manufactured in large quantities in Montpelier, France. Refuse from grapes was allowed to ferment in large earthen jars, which contained copper plates at the bottom. These copper plates were allowed to dry, and the green "goo" was scraped off, kneaded into a paste and packed in large leather bags and allowed to dry. The crystalized form was frequently used in dyes and the pigment for paints, however it was highly poisonous (Hanson 1981).

Auguste Chouteau paid some Indian women and children with verdigris, vermilion, and sewing awls for helping him start his house in St. Louis in 1763 (Hanson 1981).

References to verdigris can be found in records of the U.S. Office of Indian Trade in 1808 and 1816 as annuities payments and for trading purposes. Gardner and Williams bough two pounds of verdigris (along with eight pounds of vermilion) at W.M. Ashley's rendevous in 1825 (Morgan 1964; Hanson 1981). By the 1850s verdigris began to be replaced by the afore mentioned chrome green. Chrome green was very popular, and listed in the ledgers of several traders and trade companies, but verdigris persisted into the 1880s.

<u>Blue</u>:

Blue pigment is mentioned less frequently in early Colonial trade, however Hansen (1981) cites an 1877 reference of Prussian blue shipped by Baynton, Wharton, and Morgan to Illinois. Also called royal blue, Prussian blue is a cyanogen compound of ferrous and ferric iron which has been used since the early 18th century for paints, dyes, inks, and laundry bluing. Prussian blue was not a bright color, and became less important as a trade item during 18th and 19th centuries when indigo became much more popular.

Indigo was a vegetable pigment produced by fermentation of the twigs and leaves of a semi-tropical plant. It is still produced in India to day, but synthetic dyes have taken its place. Indigo was made into little cakes or powder, and it worked well as a water color and was being traded to the Pueblo and Navajo as a wool dye. Accounts of Chouteau show shipments of indigo to the Upper Missouri Outfit in 1846. George Belden lists popular Indian trade goods in the 1860s as "Lampblack, indigo, Chinese vermilion, green and yellow chrome, and all kinds of paints" (Hanson 1981).

Black:

According to Hanson (1981) "There are so many ways to produce black pigments from local materials, including charcoal, that it would seem unnecessary for traders to put them in an outfit. However, in the 1870s Thomas Forbes made a list of goods 'absolutely necessary for the Indians who inhabit the western frontiers of both Floridas.' and one of them is: 'vermillion and black powder for painting.' Eighty years later George Beldon listed lampblack as one of the paints eagerly sought by western Indians." (P.5). Lampblack was produced by burning resinous materials until the middle of the nineteenth century, when it was made by burning coal tar or coal gas (Hanson 1981).

Pictographic Art in the 19th Century

Pictographic art reached its fullest expression in the 19th century. Indigenous pictographic art was enormously influenced not only by Indian contact with European artists, but more so by the change in available pigments brought about by European contact. The most intensive period of change coincided with the acquisition of the horse, the increase in tribal warfare, and the increased contact with Euro-American traders and settlers (Trottier n.d.). Intertribal warfare predates European contact, as evidenced by rock art recordings throughout the Great Plains region. However, after acquisition of the horse competition for choice hunting grounds, capture of women, horses, or property, and individual desire for war honors increased (Trottier n.d.; Keyser 1979; Ewers 1997; Conner 1980; Grinnell 1926; Greene 1985).

Traditional Plains art falls into three categories: domestic, military, and sacred. Domestic art includes decorations applied by women to home furnishings, clothing, and horse tack. By creating beautiful things, a women demonstrated her regard for her family, as well as her skill and industry. Her degree of success established her place in the tribal community. Only good homemakers were invited to join elite women's societies and take an important role in ceremonies promoting warfare (Trottier n.d.). Women also painted bison robes, however the designs were mainly geometric and symbolic in nature. These non-biographic designs, such as the feather and circle and box and border designs, continued to remain constant in their use. Other geometric designs can be associated with

vision questing, namely rock art containing geometric and sacred symbols, figures with outstretched arms, and other figures attributed to shamanistic and vision-seeking activities (Keyser 1976, 1977b, 1977a, 1979, 1984, 1987a, 1987b, 1990b). This style most likely remained constant throughout the Contact era. It was the biographic art of the men, which recorded individual war exploits, that underwent the most change (Maurer 1992; Horse Capture 1993; Barbeau 1960).

Through participation in war, individual warriors gained economic wealth and social prestige. These male-oriented occupations, Ewers points out "...seem to have been uniform throughout the Plains from the beginning of the nineteenth century until the extermination of the buffalo in this region in the 1880s. The horse and man were always predominant figures, and the portrayal of heroic deeds, such as coup counting on the enemy and horse stealing, were favorite scenes." (Ewers 1939: 60).

Paintings on bison robes, tipi covers, clothing, and other perishable items are first documented on the plains in the late 1700s (Ewers 1957; Rodee 1965; Keyser 1987a, 1996, 1987b; Horse Capture 1993). According to Ewers (Ewers 1968) robe art continued to be produced until approximately A.D. 1860 and gradually declined in importance between 1860 and 1880 (during the Reservation Period). It is assumed that Ewers means that supposedly "authentic" robes were produced until 1880, i.e. ones that were not commissioned and that still continued to be used in their cultural context.

However, this thesis will show it continued well into the twentieth century, albeit in a different social and cultural context. That bison robes and other painted hides were commissioned does not imply, in any means, that these robes are either of inferior quality, nor should they be discounted as "anthropologically" relevant. A bison robe commissioned in the early 1800s by an elder asked to recount his memories and war stories is just as valuable, if not more so, for the historic significance as a robe dating

from the late 1700s by an unnamed artist who may have been living in a time closer to what anthropologists call "pristine culture". Many bison robes were commissioned by anthropologists during the early part of the twentieth century (Brownstone 1993), some from the Morris collection most likely painted on older bison hides mean to resold as carriage blankets. But hides were being produced specifically for trade much earlier. Ewers (1997:65) himself states:

> "I am finding evidence that Indians were actively engaged in making artifacts for sale to whites and that Indian traders were collecting artifacts in some quantities for resale to other whites decades before the buffalo were exterminated and the nomadic tribes of the plains were settled on reservations."

The destruction of the bison brought an abrupt end to the hide-covered tipi. Bison hide was replaced by canvas, and other pictographic art was produced more frequently on the new media such as paper, muslin, and ledgers. Many of the ledger drawings were produced at the request of United States soldiers, traders, Indian agents and other Euro-Americans (Trottier n.d.). Painted hides produced during the modern era were usually skins of animals other than bison, such as elk, moose, and domestic cattle (steer hides).

Painted robes decorated with realistic drawings fall into three classes: time counts or calendars, records of visions, and personal records or biographies (Hall 1926). Time counts include winter or summer counts, represented by a series of drawings recording significant events throughout time for a specific group of people or tribe. Records of visions are primarily of a symbolic nature and often include geometric designs or symbology unique to the individual who created them. Personal records include portrayals of war exploits or other deeds and events important to an individual, and generally lack many of the symbolic motifs related to vision records, or geometric and symbolic design created by women. Though European contact led to more formalized realism that is evident in rock art and other indigenous art forms at the time of contact and was a powerful catalyst in the Plains artistic tradition, changes were strictly technical in nature and in no way did the art form change in its social aspects. Scattered composition, right to left movement, and lack of perspective still persisted as distinguishing characteristics of Plains pictographic art (Trottier n.d.). Maurer notes the changes in *Visions of the People* (1992):

"A Comparison of this painting and other work by Plains men of the same period reveals a new, European-influenced attitude toward realism and detail... This stylistic change became widespread as more examples of European art and graphic representation became available to Plains artists through trade and other types of contact."

Chapter 3 Methodology and Analysis of the Deadmond Bison Robe

Deadmond Bison Robe Background

Dorothy Deadmond donated the robe (Figure 1) to the museum in 1987 after her husband, John, passed away in 1984 at the age of 80. Amazingly, the piece was headed for the local landfill, had it not been for the keen eye of museum volunteer Kay Ingalls while en route to collect antiques donated to the museum by the Deadmond family. According to Mrs. Deadmond and the brother of her late husband, the robe had been in possession their father for as long as the family could remember, yet the family did not know how it was acquired. Their father apparently acquired the robe when he was younger, and the children all remembered playing on and in the robe (tipi/chair "forts", what else!) from the time they were very small. (Helmick 1990, 1999).

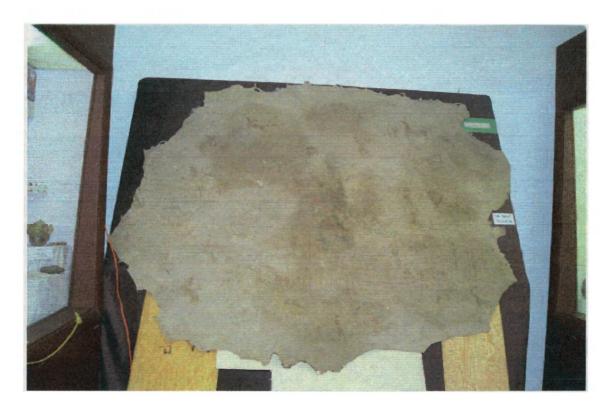


Figure 1. The Deadmond Bison Robe. Original Photograph by Janis Bouma.

Spurred by a deep interest in the robe, local archaeological and museum volunteer/enthusiast Troy Helmick contacted Stu Connors. According to museum records, Connors briefly examined the hide and forwarded a few snapshots and his interpretations of it to (the now late) Dr. John Ewers, then the Ethnologist Emeritus at the Smithsonian Institution in Washington, D.C. Several letters were written by both Helmick and Connors asking Ewers (who apparently only intermittently appeared at the museum during his retirement) for his assessment (Ewers 1989; Helmick 1990, 1999; Broadwater County Museum, various years).

Some months later, Ewer's response was that the hide was most likely a reproduction (he equated the term with "fake"), as "many such 'paintings' were commissioned by the Great Northern Railroad in the early 20th century". However, Mr. Ewers apparently was not able to spend a sufficient amount of time examining the photographs, as he describes the motifs as "paintings in brown monochrome...". In addition, (Ewers 1981a, 1981b, 1983) previous works by Ewers himself indicate that the commissions by the Great Northern Railroad of which he equated with the Deadmond piece were actually executed only on linen or muslin, not hides. Further invitations were extended to Dr. Ewers for a visit to the museum to examine the hide in person (as Ewers frequently visited family nearby) were never accepted.

In addition, the hide was also sent to Dr. Joallayn Archambault, Director of Native American Studies in the Anthropology Department of the National Museum of Natural History, Smithsonian Institution (Fisher 1989). In her opinion the hide was probably "authentic", and "very early, meaning from the first half of the 19th century (up to about 1860)..." It was also sent to the University of Denver Rocky Mountain Regional Conservation Center for professional treatment and repair in 1990 (Ewers 1989; Helmick 1990, 1999; Broadwater County Museum various years).

The Deadmond Bison Robe was first brought to my attention in 1999, while I was employed by the U.S. Forest Service, Townsend Ranger District as a seasonal/District archaeologist. In 1998, museum volunteer Troy Helmick saw two of my digital enhancements (Hand Stencil Sink Cave, Helena National Forest and a moose pictograph from the Boundary Waters, Minnesota) and asked if I could take a look at a painted bison robe at the museum. He noted that the figures were so faded out, he wondered if I could perform the same type of digital enhancements on the piece. Doing my own rock art research from the time I was an undergraduate, and quite familiar with the works of Keyser, Loendorf, and others, I immediately recognized the "thing to tie on the halter" and other important motifs usually only appearing in rock art. I immediately began the enhancements, digital auto-tracing of the motifs, and pulling background research for the piece, hoping to publish the robe and perhaps obtain grants toward its preservation. In September of 2000, Jim Keyser kindly volunteered his time to help me hand trace the robe onto a mylar sheet, and let me "pick his brain" on some issues relating to rock art and painted bison hides.

"Authentication", "Fakes" and the Reification of Scientific Dogma

The Deadmond Bison Robe authentication or lack of authentication by various researchers, as described earlier, prompts a discussion of certain agendas however conscious or unconscious, behind scholarly research of American Indian Art. Whether a painting is actually a "commissioned" piece or not, painted on muslin, linen, or hide- it still possesses value in interpretive potential, historical record, and social relevance. Those paintings commissioned by the Great Northern Railroad, no matter the medium used, are inevitably still a work of late nineteenth century indigenous art. "Fakes" they are not.

Although the Deadmond Bison robe may lack the provenance or historical

documentation often desired by researchers, it is a valuable source of information which may help link other interpretations of rock art, ledger drawings, and painted hides. It is within the realm of possibilities that the robe is a reproduction, although extremely unlikely. The family in possession of the robe had absolutely no incentive to pull of such a counterfeit. Not only would the counterfeiter need to have extensive knowledge of the culture to which the counterfeit supposedly belonged, but also extensive knowledge of contemporary hypotheses and research regarding both rock art and ledger drawings/hide painting. But probably most importantly, the Deadmond family received absolutely no monetary gain or social prestige whatsoever from the robe- the main driver of any type of forgery. To suggest that the robe started out as a counterfeit over 100 years ago, now only to become "authenticated" due to lack of documentation would only be tautological.

Although bonafide "counterfeits" among painted hides most likely exist, none within large museum collections and publications so far have been uncovered, despite less than desirable provenance of many of these (often popular) pieces. Many hides were traded several times and added to by various owners, both indigenous and non-indigenous. A few published examples from the Musee de l'Homme in Paris indicate "unknown" provenance (Horse Capture 1993), one of which mystifies authorities due to the presence of "Latin wording" inscribed upon a hide attributed to Quapaw origin; the wording is most likely the result of European contact via missionaries. Other examples from the same museum depict a red-haired, bearded European hunting bison, others are in the form of French-influenced Louis XIV geometric designs. One example of a possible "fake", attributed to "Sioux" origin is cited by Jim Keyser (Keyser 1996) as residing in the Deutsches Ledermuseum at Offenbach am Main. It has been speculated that the design of this hide painting shows entirely too much detail in the facial features and hands of the human figures as well as in other elements to be considered aboriginal. However the authenticity of this piece as yet remains neither proven nor dis-proven.

The "authentication" of indigenous art forms is a phenomenon of European contact and the resulting economic change, and is not a phenomenon peculiar to North America. Trade items brought across the seas to this continent created desire within the newcomers and original inhabitants alike to possess items of a rare, exotic, or items that became perceived as necessary (i.e. beaver belts, glass trade beads, and iron tools). As history shows this had a devastating impact on the economics, societies, and the physical environment of North America, as was the impact of the anthropological quest of salvage ethnology on North American economics and society during the beginning of the 20th century.

Anthropological thought at that time had been dominated by a social Darwinism of sorts, the hallmark of the era being the often racist "Chain of Being" paradigm; art studies were intensely focused on the "motor skills" or "motor habits" of the "primitive artist". Franz Boas sought to breath new life into the Anthropological discipline at the end of this era by attempting to bring more thoughtful, less racist discourse to the table through the juxtaposition of abstraction and realism. This was the time period which produced the important works of Wissler, Kroeber, Bunzel, Harden, and later influenced John Ewers. However, the very era anthropologists upheld as "the good old days" of not necessarily pristine, yet "salvageable" Indigenous Culture was also during the most disastrous social upheaval for many tribes: The Reservation Era. Ironically the collections from this era were also the ones which all other collections would be judged against.

A recent collection of papers by Berlo, Fane, Jacknis, and Jonaitis (1992) demonstrates how the large scale collecting expeditions of the late nineteenth century sponsored by institutions such as Bureau of American Ethnology at the Smithsonian, the Brooklyn Museum, and others spurred a huge rise in "folk", "traditional", and "primitive" art among collectors and merchants of the late nineteenth and early twentieth centuries. Under the justification of "salvage ethnology" and "salvage" collecting, many of these expeditions effectively destroyed what they set out to "save". Berlo cites Douglas Coles assessment of the collecting boom: "By the time it ended, there was more Kwakiutl material in Milwaukee than in Mamalillikula, more Salish pieces in Cambridge than Comox. The city of Washington contained more Northwest Coast material than the state of Washington, and New York City probably housed more British Columbia material than British Columbia herself" (p.3). The Smithsonian's "salvage" of 6,500 pots from Zuni and Acoma within the period (1880-1885) left no design sources from which to draw upon. By the time Ruth Bunzel performed field work there forty years later, the "stagnation and inferiority" of pottery was "evident".

Stewart Culin, whom the Zuni nicknamed Inotai (which means "Old Things") was so obsessed with the "authentically old" that he commissioned Native artists and elders to produce replicas of certain items from memory, even if those items had long since lost fallen out of favor and utility among the Zuni. James Mooney commissioned small-scale replicas of tipis among the Kiowa, even though at the time of his visit, only one painted tipi remained among them. The new inventions in basketry designs of Washoe basket maker Louisa Keyser was marketed for prices as high as \$1,400 in 1914, a considerable sum for that time period. The professional marketers of her wares frequently "invented documentation" (provenience) for the sake of boosting prices. This in turn fed an interest in the personality of the "real" Indian artist. By the 1920s, San Ildefonso potter Maria Martinez was signing her pots as well as those of her colleagues in response to the demands of the Anglo marketplace. As the market was beginning to demand "signed works", this type of phenomenon also occurred in Oklahoma and the Pueblo area (Berlo 1992:13).

The irony is that the very items commissioned, marketed with falsified documentation or provenience, and those legitimately collected became canons by which to assess authenticity of specimens from periods both before and after the "Great Salvage Stampede". In effect, the anthropologists of the Salvage Era, sometimes unknowingly, reified the anthropological paradigm of that time and further self-justified their tasks. The terms "fake", "counterfeit", and "forgery", are often used qualitatively as a paradigm balanced against "authentic", "traditional", and "antique" when assessing items of material culture. However, these terms *are* of a qualitative nature, and must be used with caution.

Anthropological collections tell us just as much, if not more about the *collector* than of the culture from which it came. Each piece collected and now exemplified as "authentic" or "traditional" is a product of the social, political and economic climates of the era from which it was produced. As noted by Janet Catherine Berlo in "The Early

Years of Native American Art History", French philosopher Jean-Paul Sartre observed that "the social scientist and his 'object' form a couple, each one of which is to be interpreted by the other; the *relationship* between them must itself be interpreted as a moment of history" (Sartre 1963:72 c.f. Berlo 1992:1).

Pictographic Analysis of the Deadmond Bison Robe

It is possible that radiocarbon dates and/or amino acid racemisation dates could be obtained from the robe. However, due to limited research funding and the limitations inherent in both dating techniques, this would not be a cost-effective scenario. Coupled with the relatively rapid change in biographic art over the past 500 years and the statistical error calculated into radiocarbon analysis, it is likely that radiocarbon dating would return dates with too wide a time span to be a practical means of assessing age or authenticity.

Amino acid racemisation may be possible, as it is restricted to paintings less than 1800 years old. However, it depends on the presence of albuminous binders, such as blood or eggwhite, in paintings. Trade pigment analysis is a solution to absolute dating (Rowe, personal communication 1999), as the different types of commercial pigments widely available at different times during the Fur Trade era contain several chemical signatures (see appendix 1), however the cost per sample and other expenses related to sampling was found to be beyond the scope of this thesis and not economically feasible, but may be possible at a future date.

With the Broadwater County Museum's permission, a small sample of the hide and hair was obtained from the Deadmond Bison Robe. With the aid of the Biological Sciences Department of the University of Montana, hairs were treated and viewed under a microscope in order to discern variations in hair shaft banding, striation, and basal configuration from that of bison (*Bison bison*) and common cattle (*Bos bos*) (Moore 1974). Unfortunately, sample guard hairs of the appropriate length were extremely difficult to locate due to the age and of the Deadmond Bison Robe and brittleness of the hair. Banding arrangement, basal configuration, and other various guard hair attributes within the Family Bovidae so closely resemble each other that further opinion must be sought.

Color arrangement of the hair, viewed under higher magnification using the samples obtained of the robe may be help in the exact identification of the hide, although I must add that differentiation of hair from the Deadmond Bison Robe from common varieties of *Bos bos* such as Herford, Brown Swiss, Black Angus, Guernsey, and Shorthorn (all of which are relative newcomers to the plains) is readily apparent. The coats of all of these common domestic cattle breeds differ greatly from that of bison in that they possess much smoother coats and differ greatly in both color and texture, namely mottled hides and large spots or roaning on the coat (as with Shorthorn, Longhorn, and Hereford). In addition, when skinned, the hides of domestic cattle are typically thinner and smaller dimension than that of bison. In addition, Keyser (personal communication 2000) confirmed my identification of the hide as that of bison; "authenticity" of the piece, relating to species, is no longer an issue.

With the above perturbations of absolute dating methods relative to this specimen outlined above, it is possible to attempt *relative* dating of the Deadmond Bison Robe through seriation with other robes whose interpretation and historical context have already been attempted/confirmed. Comparisons will be drawn between the Deadmond Bison Robe pictography and that of published works on Blackfeet bison robes, tipi covers, and painted hide shirts now located in the Musee de l'Homme, the Royal Ontario Museum, the Museum of Copenhagen, and other museums around the world. In order to accurately perform counts of the motifs contained on the Deadmond Bison Robe, it was first necessary to digitally enhance the images (examples of which are seen in Figures 3-5 above). As formerly noted, Jim Keyser assisted in the hand-tracing process, in which the digital enhancements became invaluable as aides.

Due to the fading of the pigments and the fragility and brittleness of the hide, it was necessary to photograph the motifs and groupings of motifs using both 35mm slide and print film. The less than pristine condition of the hide, coupled with low-light conditions of the museum itself necessitated digital enhancement of these slides and prints, which tremendously benefitted analysis of the designs. During enhancement of the photographs, the utmost objectivity was kept in mind, with the motifs themselves left unchanged, only the input and output light levels, color values, and contrast changed on a global scale to the entire photo. This technique is currently used by many museums, archaeologists, and rock art researchers around the world in order to evaluate sites and specimens that have undergone extensive damage or deterioration (Clogg 1999; Arca 1999; Firnhaber 1999; Greer and Greer, 1998). Benefits of digital enhancement rival other techniques such as black light and x-ray analysis in the ability make apparent underpaintings, preliminary sketches, colors, and other elements that on a macro-level the human eye cannot sometimes readily perceive. Individuals using this technique are aware of the "fine line" between "enhancing" and actually "editing" an image.

The figures that follow (Figures 2-5) use both the original photograph and lighting conditions, and the enhanced photographs to illustrate the focus of this paper. It must be kept in mind that these enhanced images will appear in unrealistically vivid colors in order to "pull" the motif from background hide "canvas" to facilitate analysis and interpretation. In addition, these digital enhancements were then sketched, or "auto-traced" using specialized software in order to show the scale and relationship among the motifs (Figure 6). This technique is currently being used by John Brayer, et al. (University of New Mexico, Albuquerque) in the recordation of Australian Aboriginal rock art, by Andrea Arca in Alpine and European Open Air rock art near Valcamonica, as well as many other researchers worldwide (Brayer 1999; Arca 1999; Clogg 1999; Firnhaber 1999). While both these techniques have both positive and negative consequences, the overall advantages include less subjectivity to interpretive conventions during recording (i.e. hand drawn sketches or tracings), scalability, portability, and greater ease in publishing.



Figure 2a (above). Mature style horses. Original photograph. Figure 2b (below). Digital enhancement.

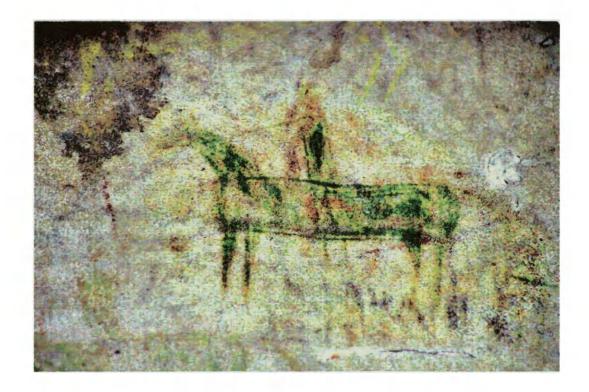




Figure 3a (above). Original Photograph of horse capturing scene (cutting the picket). Figure 3b (below). Digital enhancement.





Figure 4a (above). Tally of captured bow, quiver, flintlocks, lances, and powder horn. Figure 4b (below). Digital enhancement.





Figure 5a (above). Bow vs. gun combat and tally of captured weapons. Figure 5b (below). Digital enhancement.



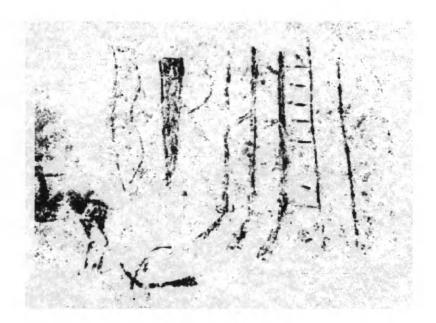


Figure 6. Digital auto-tracing showing count of weapons: Bow, flintlock guns, coup sticks/lances.

Chapter 4

Chronological and Cultural Context of the Deadmond Bison Robe

The Deadmond Bison Robe is an important example of the Plains Biographic Art Style of pictography (Keyser 1979). It contains over fifty separate human motifs and several horse motifs organized in twelve different groups or scenes. The motifs were painted using brown, red, yellow, and green pigments. Examples of scenes depicted on the robe include mounted, shield-bearing anthropomorphs, unmounted anthropomorphs engaged in gun vs. bow combat, coup counting, and a tally of captured goods in the lower right corner. The hide measures 80" x 67", and was tanned hair-on. The drawings were executed on the flesh side with the action moving from right to left (tail to head) and in a somewhat clockwise fashion around the outside of the hide. This is typical of Northern Plains style of hide painting, whereas the robe is often worn with the head of the hide oriented at the left shoulder, drawings right side up for viewing (Ewers 1939, 1957; Mails 1972; Dockstader 1973; Horse Capture 1993; Hall 1926).

Painted robes decorated with realistic drawings fall into three classes: time counts or calendars, records of visions, and personal records or biographies (Hall 1926). Time counts include winter or summer counts, represented by a series of drawings recording significant events throughout time for a specific group of people or tribe. Records of visions are primarily of a symbolic nature and often include geometric designs or symbology unique to the individual who created them. Personal records, or Biographic Art, includes portrayals of war exploits or other deeds and events important to an individual, and generally lack many of the symbolic motifs related to vision records. However, four examples of robes showing a few Biographic scenes scattered among geometric designs are located in the Musee de l'Homme, and predate the French Revolution (Horse Capture 1993; Keyser 1996). The Deadmond Bison Robe falls into the latter category of Biographic Art, and was executed in the Early Biographic Art style.

The Early Biographic Art Style

Following Jim Keyser's (1977a, 1979, 1987a) outline of the Biographic Art Style (Figure 7), the Deadmond Bison Robe was painted in the Early Biographic Art Style which falls between A.D. 1775 and 1830. Rock art scenes are the primary examples known, but early explorers collected a few of this style that predate 1800 (Ewers 1939, 1968; Barbeau 1960; Keyser 1987a). The Deadmond Bison Robe, as will be shown through seriation analysis, dates to the Late Biographic period (1890) yet was executed using the Early Biographic style of pictography. The following photographs of the Deadmond Bison Robe demonstrate several of the main commonalities of the robe with Early Biographic Style rock art as opposed to the Late Biographic Art Style:

1) Mature style horses characterized by elongated bodies, necks, and legs and flowing manes and tails. This is in contrast to boat form horses of Late Prehistoric and Protohistoric Period or "Proto Biographic" rock art and the Late Biographic Style Art characterized by 3D bodies, more anatomical detail, and perspective (Figure 2). According to Keyser, this is the "Hallmark of Early Biographic art" (Keyser 1987a: 54).

2) Horses depicted with *hooked* hooves. (Figures 3 and 4). This is opposed to large dots or small circles on Protohistoric Period rock art and the realistic-3D-type hooves of the Late Biographic Art Style and ledger art.

3) Dwellings, guns, ceremonial items, headdresses, other items of material culture (Figures 3 and 4).

4) Other commonalities of this robe with the Early Biographic Art Style include headdresses with feathered decorations, guns, and coup sticks and lances (Figures 4 and 6). This also includes flintlock rifles as shown by the locks and heavy trigger guards, bows, tipis, and quivers.

Prehistoric Period Rock Art	
<u>A.D. 1000- A.D. 1700</u>	Ceremonial Style Rock Art -Static, carefully executed, focused on details of humans and animals. Includes shield-bearing warriors, v-neck and rectangular body humans, boatform zoomorphs, vulvaforms, weapons, ceremonial items and other items of material culture-
<u>A.D. 1625-A.D. 1775</u> Historic Period Rock A	Protohistoric Period Rock Art -Transition from Cermonial Style Rock art Combat and battle scenes, men holding guns or riding horses, general trend toward depiction of events, horses with circles or dots for hooves -
<u>A.D. 1775-1880</u>	Early Biographic Style Rock Art -Mature style horses with elongated bodies, necks and legs and with flowing manes and tails; quirts, horses with hooked hooves, dwellings, guns, ceremonial items, headdresses, other items of material culture-
<u>A.D. 1830- 1850</u>	Late Biographic Style Rock Art -More realism, three-dimensional effects, aspect, realistically depicted horse hooves in rock art, ledger art, and perishable items.

Figure 7. Adapted from Keyser (1977a, 1979, 1987a). Items in bold indicate commonalities with the Deadmond Bison Robe.

The Deadmond Bison Robe contains another very important element of Blackfeet identity (Figure 8-red mounted horseman), one usually only depicted in rock art, and one shown only on one other bison robe: the object hanging below the horse's bridle portrays an important marker of tribal affiliation, according to research on the topic by Jim Keyser (1991) and John Ewers (1955). Recorded in some detail by Clark Wissler (1912), the bundle (Figure 9) was known in literal translation as "a thing to tie on the halter", and its purpose was to give"... protection and power against the enemy or buffalo in that it increases the sure-footedness and speed of the horse" (Wissler 1912: 107). According to Ewers, the item was constructed of a thin stick approximately 18" long, covered with red trade cloth, with feathers hanging from both ends and "small bags of horse medicine tied to the stick." (Figure 10, Glenbow Museum, Calgary). Others were trimmed with white weasel skins. These bundles were blessed by horse medicine men for use in war, and songs were sung in conjunction with the use of this bundle (Keyser 1991, 2000). This object is depicted in only one other bison robe, the Shorty Whitegrass/Sharp robe, now located in the Smithsonian Institution (Keyser 2000; Ewers 1983; Taylor 1998) (Figure 11).



Figure 8a (above). "A thing to tie on the halter". Original Photograph.

Figure 8b (below). Digital enhancement showing "A thing to tie on the halter"- yellow feathers with black tips pendant from the horizontal red pole. Note hooked or c-shaped hooves.





Figure 9 (above). From Wissler (1912) Figure 10 (below). Glenbow Museum, Calgary.





Figure 11. The Shorty Whitegrass/Sharp robe, Smithsonian Institution. The yellow arrow shows the location of the "thing to tie on the halter". The actual motif lies in a fold, and is extremely difficult to see without significant magnification (Keyser personal communication 2000). Keyser (2000) first documented the "thing to tie on the halter" from this bison robe, which was previously well-documented by Ewers (1983) and Taylor (1998), however the bridle decoration had never been recognized.

To compare the Early Biographic Art Style motifs exhibited by the Deadmond Bison Robe with the same style of rock art, the following examples are adapted from Keyser (1987). These illustrations from Early Biographic Rock Art Style sites located at Writing on Stone, Alberta, Canada, as well as sites from Central Wyoming and South Dakota and various ledger book drawings share common design elements with the Deadmond Bison Robe (Figures12 -14). Comparison of these various types of art forms further illustrates the continual use of both symbolic and descriptive designs throughout time, unique to the culture of the individual(s) who created the works for specific purposes. The following section will cover the interpretation of the Deadmond Bison robe and will demonstrate the tribal affiliation of the piece is Blackfeet.

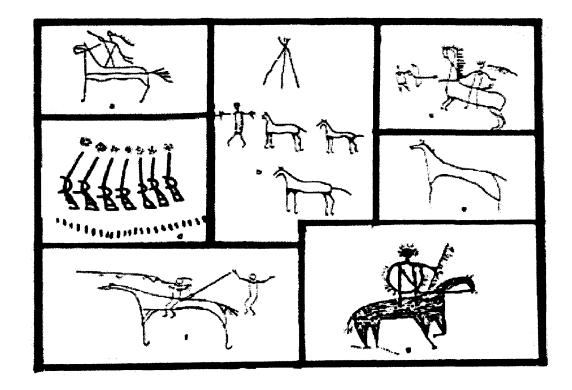


Figure 12. Early Biographic Style rock art. (From Keyser 1987a).



Figure 13. Early Biographic Style petroglyph from Writing-On-Stone, Alberta.

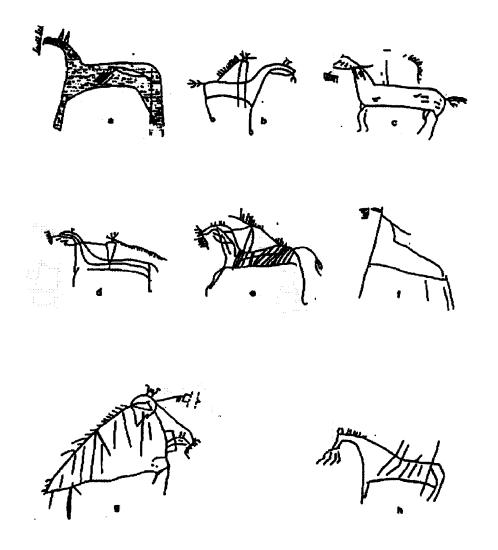


Figure 14. Rock art depictions of "a thing to tie on the halter". a-f: Writing-On-Stone, Alberta (DgOv2, DgOv49, DgOv79, DgOv84, DgOw27); g: North Cave Hills; h: Central Wyoming (From Keyser 1991).

Interpretation of the Deadmond Bison Robe

The following interpretation of the Deadmond Bison Robe draws from many works cited earlier on the subject of Blackfeet style pictography and rock art, especially works of Wissler, Keyser, Klassen, Brownstone, and Loendorf. For convenience I have loosely defined twelve different scenes with black outline and numbered them to assist in the interpretations of the individual motifs within these groupings (Figure 15). Because of the "flowing" nature of the motifs, these arbitrary groupings may not necessarily coincide with actual "story scenes"; some figures from one scene may "overflow" into the arbitrary groupings assigned here.

Comparisons with these motifs and those of other robes used in the seriation show that nothing on the Deadmond piece seems out of place or incongruous with the Blackfeet tradition. In fact, so many elements of the piece are *so* similar to other (including early robes) in the sample, notably the Shorty Whitegrass/Sharp robe, that according to Keyser (2000, personal communication) "...it could be the same artist, but that would be impossible to prove...".



Figure 15. Deadmond Bison Robe tracing on Mylar.

Group 1.

The central and largest mounted horseman is the classic Blackfeet style of geometric (triangular) human figure with a circular head connected to the body by a thick black line. He is shown mounted without depicting the legs. The same figure is also shown wearing an animal skin bag or decoration behind his head, which seems in this case to be decorated with feathers or some other type of trailing objects (I had originally noted this object to be a feathered-type headdress with trailers, however on closer examination, at least one of the animal's legs can be seen, as well as what appears to be a flattened head). The horse is depicted in the style of "inverted triangles" thinning to lines for legs. Interestingly, the tail of the horse either bears some sort of pendant decoration or special flag or braid.

To the right of this central figure, and connected to it by the dots or ovals representing footprints (storyline, denoting chain of events) is depicted a human figure holding a bow, and which has a "floating weapon" (rifle) near his head. This is also the figure I noted earlier that has been "rubbed out", as indicated by the rectangular mark going diagonal from the upper right to the lower left of the torso.

Below the two figures noted above lies two other mounted horsemen depicted with both legs on one side of the horse. To the right of them is a captured blanket.

The footprint storyline also travels either away from 10. or toward it (most likely they go toward scene 10, as most action moves from left to right).

Group 2.

A mounted horseman in the classic pose of both legs positioned on one side of the horse, holding a rifle. Above him is a pedestrian figure of the square-bodied style. In front of the mounted horseman is a tree (seen in other Blackfeet robes in the sample), and behind this tree lies a human figure lying in a prone, or crouched position holding a rifle. This scene could denote the mounted horseman was either ambushed by the figure behind the tree, or the prone position of that figure could denote that he had been killed.

Group3.

This is another storyline/chain of events type scene. The figure wearing the horned headdress and bow seen holding the horse captured the rifle of the figure wearing the topknot hairstyle on the right, as seen by the three-fingered capture hand below the rifle. The horse may have been capture as well, as shown by the outstretched arm and threefingered hand.

Group 4.

Two pedestrian figures are shown on the right engaged in combat and connected by a story line set of footsteps. The figure on the far right shows rayed lines above his head, possibly a type of head ornament or headdress, or possibly some sort of coup indicator. These same types of rayed lines are also just to the left of the figure he is seen confronting. The object to the lower left of them is unidentifiable, but may represent something captured or a type of coup, as well as the mark or unidentifiable figure on the shoulder of the human figure on the right.

To the left of these men are two mounted horsemen. The one on the right wears an animal skin decoration behind the head, and the one on the appears to be counting coup on him.. Above these two mounted horsemen is depicted items captured, including two hatchets (the one on the right has a three-fingered capture hand attached), two bows, and a lance or staff with a three-fingered capture hand attached.

Group 5.

Shows two mounted horsemen, the one on the right with both a rifle and a shield. A long line connects the horseman on the left to the back of the horse on the right. The rider of the horse on the right is shown with both legs on one side of the horse, the rider on the left is shown with no legs.

Group 6.

Shows tipi poles in the uppermost right corner. The representation of the dots to the right of the tipi is unknown. One horse is shown directly below the tipi. Along the bottom margin are two human figures engaged in combat, the one on the right holds a feathered lance. Above them are captured items, including a feathered lance, what appears to be either a quiver with a strap or a pipe bag with a strap, and a quiver with a strap (left to right).

Three horses are located in the lower left. One is shown with a saddle, another with a saddle and two riders (the rider in the rear is shown with a solid circle above his head, much like the Big Moon robe). The lower horse has no rider, the upper two horses are shown with five-fingered capture hands holding the bridle or lead rope. Two more human figures are engaged in combat in the upper left. The human figure on the right has a rifle (intersected by an unidentifiable object) and is shown with a solid circle near his shoulder (possibly a shield).

Group 7.

Four mounted horsemen are shown, connected by a storyline originating in or going toward scenes 8 and 12. (most likely toward scenes 8 and 12, as the footprints denote dismounting, and would otherwise run off the robe). The horseman on the upper right is shown with no legs, riding a horse with c-shaped hooves; the one on the upper left is shown with both legs of the rider on one side of the horse; the horseman on the lower right is shown with both legs on one side of the horse; the horseman on the lower right is shown with both legs on one side of the horse; the horseman on the lower left is shown with both legs on one side of the horse; the horseman on the lower left is shown with both legs on one side of the horse, with the horse showing red dots on the body and throat representing wounds or a kill.

Group 8.

The upper left shows a horseman wearing an animal skin decoration at the back of

his head. Both rider's legs are shown on one side of the horse. Two pedestrian figures are shown in the center engaged in combat. The human figure on the left has a bow, the one on the right a rifle. A horse painted with striped designs or large spots is shown on the far right.

Group 9.

Two horsemen are depicted engaged in combat in the lower portion. The rider on the left has a rifle and the horse he is mounted on is depicted with c-shaped hooves. The rider on the right is apparently unarmed, and the horse he is mounted on appears to be wounded, as indicated by (red) dots of blood near the shoulder. Both riders are depicted with the legs on one side of the horse.

The upper left of this area shows another type of storyline, or chain of events depiction. The rider and the man shown cutting the picket line of the horse outside the tipi may be the same individual shown carrying out different actions at different times. He is shown cutting the picket line (note the picket stake is a single line, one of the afore mentioned Blackfeet artistic styles and the rifle slung across his shoulder) then depicted again astride the horse holding a rifle and wearing a horned headdress. The horse is shown with c-shaped hooves and wearing the Blackfeet horse medicine bundle ("a thing to tie on the halter). This scene may denote first the capturing of the horse by cutting the picket (an important type of coup), then astride the horse which may have been his best horse. The significance of the horned headdress in unknown, but may be denoting a rise in status. A similar human figure wearing a horned headdress is shown in scene 3, and they may be the same person (this may be the focus of the exploits, or the actual artist who painted it- the "hero of our story").

To the right of this scene is a typical tally of captured items, including two lances or staffs (one feathered), three rifles, a quiver with a strap, a bow, and a powder horn (positioned directly behind the horse).

Group 10.

A dug-out or fortified blockade or rifle pit, with at least four human figures shown inside and surrounded by several rectangular human figures. The upper portion of this delineation shows what appears to be a rifle on the right and a lance or staff on the left. The entire left side of this scene has been obliterated by a large stain.

Group 11.

Four horses are depicted, two with riders shown with no legs. The central portion of this area has been obliterated by a large stain.

Group 12.

Another tally of captured items. The lower right shows two rifles, the central portion shows possibly some type of quiver or storage items connected by either a long strap or a line denoting some action or other representation. To the left of these items are

two unidentifiable items (possibly two lances or staffs). The upper left depicts two captured items- a fringed and decorated bag on the left and a fringed and decorated bag or quiver on the right. The upper right depicts either two staffs and two rifles, or four rifles. <u>Relative Dating: A Seriation Study of Blackfeet Painted Hides</u>

The use of ceramics in construction of chronologies has a long history in archaeological studies, extending back to the work of Sir Flanders Petri in Egypt in the late nineteenth century. The association of certain classes of vessels in stratigraphic sequence within an archaeological site provides one such means for constructing ceramic chronologies using the principle of stratigraphy. It is possible to cross-date archaeological sites through the use of seriation when these sequences are repeated across a site or a region. Mayer-Oakes (1955) produced one of the most referred to examples of seriation using a study of artificial illumination between 1850 and 1950 (Figure 16). Deetz [Deetz, 1977 #141] also used seriation in his study of New England gravestone designs (Figure 17).

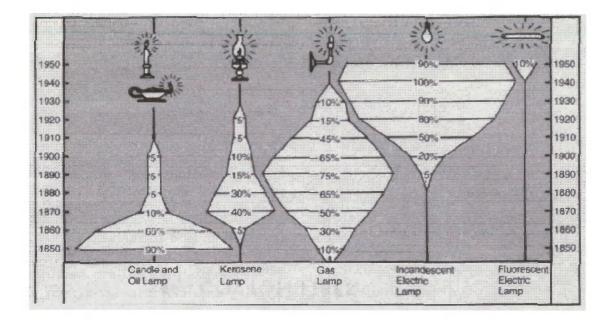


Figure 16. Seriation example. Popularity of the different types of lighting devices (Mayer-Oaks 1955).

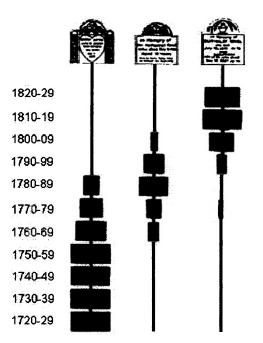


Figure 17. New England gravestone designs (Deetz 1977).

te dating techniques such as carbon 14 and ciation of organic remains with precision (Sinopoli, art studies, however, absolute dating of this type is not ctions such as hide paintings, for a variety of reasons

erlying the principles of seriation is that styles, or

popularity, changes unoughout time (Deetz 1977; Sinopoli 1991). It is assumed that a class of objects, a style, or in this case, motifs, are introduced slowly into a social system, gradually increase in popularity, and then decrease again. Sinopoli (1991:75) uses the analogy of the rise and fall of bell-bottom pants during the 1960s and 1970s. However, styles are often revived, for traditional, reflective, or whatever reasons, and do not necessarily decline into oblivion, as witnessed by both the recent "revival" of "retro" clothing styles, and traditional Blackfeet artistic styles.

The following "bison robe" seriation was constructed using both the digital enhancements and the hand-traced mylar of the Deadmond Bison Robe. This seriation was constructed using Ford's (1961: 41-42) four requirements of a successful seriation: 1: Material must be collected from a limited geographical area so that differences in kinds or quantities of material are not due to this factor. I have limited the collections (motifs) in this seriation to the Northern Plains, but more specifically, only examples that have a designated Blackfeet cultural affiliation through either published works, museum documentation, or through scholarly opinion.

81

2: Each collection must be unselected and large enough to give reliable percentages. A total of 100 or more sherds is desirable, but occasionally collections as small as 50 can be used. Although more Blackfeet painted hides are bound to be discovered/unearthed from various museums and publications, I have limited this seriation to a total of 28 examples.

3: Each collection must represent a short period of time- the shorter the better. A sampling of the ceramic population representing an instant in time would be ideal, but, of course, is never achieved. Sherd collections representing long spans of time are valuable as indicators of localities that might yield stratigraphy, but they cannot be used in seriation... The time span represented by the painted hide collection I have chosen is approximately 1790-1930/1940. Archaeologically, this is a short time period, however, given the rapid change in pictographic art from the time of European contact, this represents quite a long time span, especially given the nature of organic artifacts (such as painted hides)-i.e. fragility and short use-life.

4: The region being studied must be searched thoroughly enough to be certain of having secured samples that represent the entire span of occupation. If all of the collections are of the same date, they will not seriate; if there are substantial periods of time not represented, the seriation will be uneven at these points. This is somewhat unavoidable given the nature of painted hide collections scattered all over the world. Plains Indian art was collected and purchased by many, many traders, anthropologists, collectors, and individuals who seem to sometimes "disappear" into history. This further points to the value of researching museum archives, as evidenced by the Shorty Whitegrass/Sharp

example- known for years, but details were yet to be analyzed. The following seriation will be added to/modified as further data is discovered; it will, however, be a valuable tool for addressing the rate of change in artistic style and to uncover patterns previously eluded to but not directly addressed by past research on the subject.

The following frequency tables were constructed using counts of five types of human motifs (Table 1) and three types of horse hooves (Table 2) after Keyser (1987a, 1987b, 1991, 1993, 1995, 1996, 1977) based on style changes in these types already well documented. A collection of 28 Blackfeet hide paintings including the Deadmond Bison Robe, one painted hide shirt, one tipi door flap, and one tipi cover were used for both the human figure seriation and the horse hoof seriation. The same collection was drawn from for the horse hoof seriation, however, the Humphrey Lloyd Hime robe was dropped from the horse hoof seriation due to lack of enough visible information for horse hoof counts, for a total of 27 hides for the horse hoof analysis. Resources used (Appendix 3) include painted hide articles from various museums, published photographs from similar archaeological and ethnographic research, and from the journals and artwork of Karl Bodmer. Only those hides containing biographic pictorial elements were used. Table 1. Frequency of human motif types.

Robe Natural Rectangular V-Necked Triangular

Other

Goorgo Bull Child	6(22)	0(0)	0(0)	20(77)	0(0)
George Bull Child Black Boy	6(23) 31(91)	0(0) 0(0)	0(0) 0(0)	20(77)	0(0) 0(0)
Big Moon	• •	0(0)	0(0)	3(9) 0(0)	0(0)
Wolf Carrier	4(4)	21(21)	0(0)	75(75)	0(0)
Running Rabbit	4(2)	28(13)	0(0)	180(85)	0(0)
Calf Child	15(16)	58(63)	0(0)	19(21)	0(0)
Four Piegan Chiefs	43(22)	131(69)	0(0)	18(9)	0(0)
Wissler	31(25)	62(50)	0(0)	31(25)	0(0)
Three Suns	12(10)	51(44)	0(0)	53(46)	0(0)
Sharp	0(0)	29(45)	0(0)	36(55)	0(0)
Many Shots	0(0)	48(91)	0(0)	5(9)	0(0)
Crop Eared Wolf	0(0)	11(48)	0(0)	12(52)	0(0)
Royal Ontario	0(0)	21(54)	0(0)	18(46)	0(0)
Hime	0(0)	62(93)	0(0)	5(7)	0(0)
Sweden	0(0)	Ò(Ó)	20(95)	000	1(5)
Bodmer	0(0)	1(7)	Ò(0)	13(93)	0(0)
Bodmer and	0(0)	10(43.5)	0(0)	10(43.5)	3(13)
Maximillian					
Copenhagen	0(0)	43(93)	0(0)	3(7)	0(0)
Musee de l' Homme	0(0)	15(30)	35(70)	0(0)	0(0)
Deadmond	0(0)	31(62)	0(0)	19(38)	0(0)
Merriam	0(0)	16(76)	0(0)	5(24)	0(0)
Glenbow AF2545	2(100)	0(0)	0(0)	0(0)	0(0)
Glenbow AF405	0(0)	0(0)	0(0)	6(100)	0(0)
Glenbow AF1397	16(18)	36(40)	0(0)	37(42)	0(0)
Glenbow R676.7	17(81)	0(0)	0(0)	4(19)	0(0)
Glenbow AF870	0(0)	11(37)	0(0)	19(63)	0(0)
Glenbow AF402	0(0)	0(0)	0(0)	43(100)	0(0)
Glenbow AF4692	0(0)	31(94)	0(0)	2(6)	0(0)

84

Table 2. Frequency of horse hoof types.

RobeHool	ks, Dots, & C's	Naturai	None
George Bull Child	6(100)	0(0)	0(0)
Black Boy	0(0)	5(15)	28(85)
Big Moon	5(12)	10(24)	27(64)
Wolf Carrier	16(64)	8(32)	1(4)
Running Rabbit	0(0)	11(21)	41(79)
Calf Child	0(0)	4(45)	5(55)
Four Piegan Chiefs	0(0)	5(12)	36(88)
Wissler	0(0)	15(50)	15(50)
Three Suns	0(0)	12(100)	0(0)
Sharp	14(49)	10(34)	5(17)
Many Shots	16(48)	0(0)	17(52)
Crop Eared Wolf	4(36)	0(0)	7(64)
Royal Ontario	18(67)	0(0)	9(33)
Sweden	0(0)	0(0)	0(0)
Bodmer	3(100)	0(0)	0(0)
Bodmer and	6(100)	0(0)	0(0)
Maximillian			
Copenhagen	5(83)	0(0)	1(17)
Musee de l' Homme	5(100)	0(0)	0(0)
Deadmond	6(27)	2(9)	14(64)
Merriam	5(83)	0(0)	1(17)
Glenbow AF2545	0(0)	0(0)	2(100)
Glenbow AF405	0(0)	0(0)	0(0)
Glenbow AF1397	0(0)	3(5)	55(95)
Glenbow R676.7	0(0)	5(100)	0(0)
Glenbow AF870	0(0)	0(0)	8(100)
Glenbow AF402	0(0)	0(0)	13(100)
Glenbow AF4692	0(0)	7(88)	1(12)

Note: "other" indicates instances of round-bodied, shield-bearing warriors located on the Prince Maximillian Weid journal/Bodmer drawing, and motifs on the shirt located in Stockholm, Sweden that could not be classified. In addition, those examples showing no horses were still included as they are still data points even if no horses are depicted presence or absence of horses is an important time marker. The category of "none" for horse hoof types indicates the motif depicts horses, but they are shown with no hooves. The following seriation (Figures 18-21) resulted from the data, with date ranges shown using the dated examples. The red bars denote pieces with no museum provenience, yellow bars indicate dated examples; a second seriation of each motif type is included for reference as to how those pieces with little or now provenience affected the date placement (little to no effect) of the Deadmond Bison Robe.

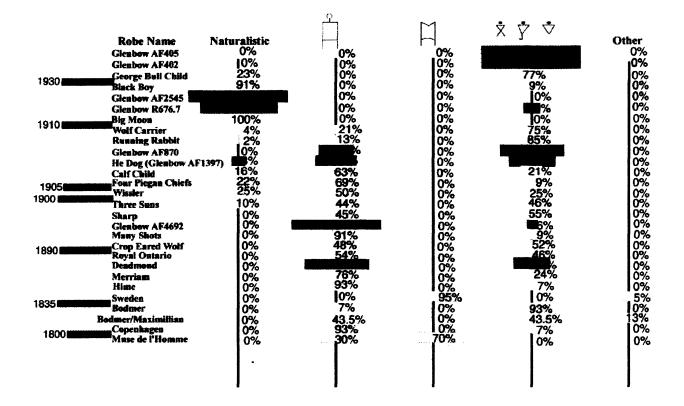


Figure 18. Seriation of human motifs.

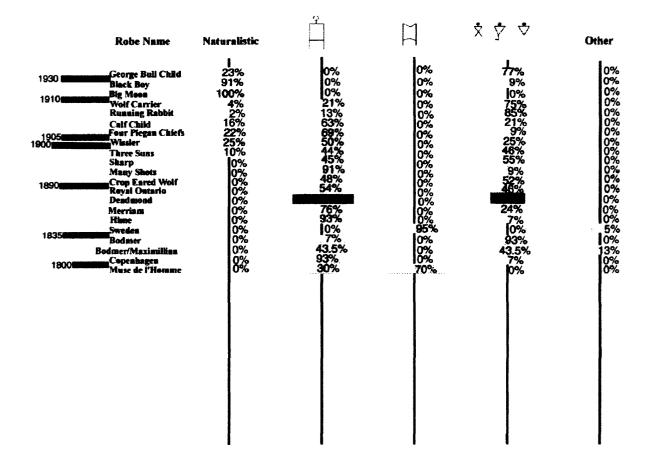


Figure 19. Seriation of human motifs, Deadmond Bison Robe shown as the only piece with unknown provenience.

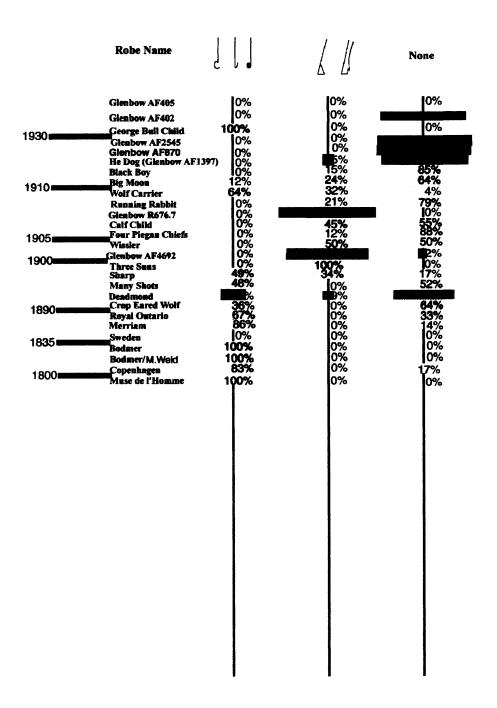


Figure 20. Seriation of horse motifs.

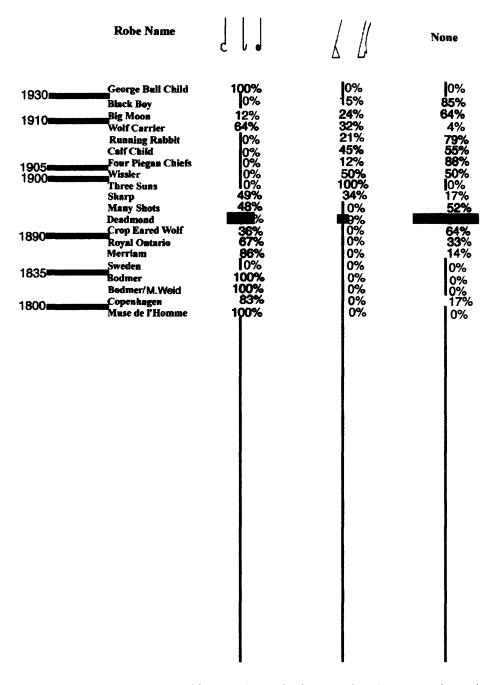


Figure 21. Seriation of horse motifs, Deadmond Bison Robe shown as the only piece with unknown provenience.

The Deadmond Bison robe has been shown through seriation of human motifs to date to the era 1835-1890, and slightly later through the horse hoof seriation, 1890-1900. However, additional evidence such as human motifs styles most similar to earlier hides, outlined bodies of both horses and humans (as opposed to solidly filled), and the absence of naturalistically depicted humans strongly supports the earlier date for the Deadmond Bison robe. Additionally, anecdotal accounts from the Deadmond family who once possessed the robe (it belonged to the senior Mr. Deadmond, and his children tell of playing on it) would place the origin for this robe at the latest 1890.

Several trends can be easily recognized in the human motif seriation. First, in terms of Blackfeet pictographic styles, it seems naturalistically depicted humans did not begin to become popular until approximately 1900 or slightly before. No humans are depicted with facial features, are shown with hands, or are shown in frontal view until this date. Second, the style of the "stockier, less mobile" (Brownstone 1993; 16-17) rectangular shaped humans and the triangular shaped humans seem to be the most favored throughout the entire time span of the seriation, with very little variation or reoccurrence in battleship-shaped curves for the period 1790-1930/1940. Third, the almost complete absence of v-necked human motifs, with the exception of two of the earliest hides, the painted shirt located in Stockholm and the Muse de l' Homme robe, indicates this style to be the earliest until European contact. The v-necked human style is somewhat universal in Early Biographic Style rock art, and is not restricted to Blackfeet pictography (Keyser 1975, 1977a, 1979, 1984, 1987a, 1987b, 1996, 2000). The style is more commonly seen depicted in rock art, especially that of Writing-On-Stone, which supports the early dates

for the Stockholm and Muse de l' Homme hides.

Several trends are also apparent in the horse hoof seriation. First, the early style of c-shapes, hooks, and dots shows the most popularity from 1790 to the late 1800s, with the exception of Wolf Carrier, Big Moon, and George Bull Child. Both Wolf Carrier and Big Moon were quite elderly at the time their war exploits were commissioned and collected³, and therefore drafted the figures in the manner of which they were trained for so many years. George Bull Child⁴, born in 1893, was a generation too young to have participated in the intertribal wars of the nineteenth century. His father, also named Bull Child, was a recognized and renowned warrior from whom the younger George learned the traditional painting style (Ewers 1983), including the use of the c-shaped hooves shown on horses.

A second trend illustrated by the horse hoof seriation is as trend toward either naturalistically depicted hooves or the absence of hooves depicted on horses starting at approximately 1900 or slightly earlier. This date also corresponds with naturalistically depicted humans, and both are indication of European artistic influence. The trend toward realism as a whole corresponds with the Reservation Era, relatively late in the time period of study.

Other notable trends, although not illustrated through the seriation shown, include the use of solidly-filled humans and horses, more realistically depicted items of material culture and dwellings, and scattered use of geometric designs (decorative elements, often at the edges of the hides) mixed with biographic art. Again, beginning most notably at about the Reservation Era, traditional outlined, triangular shaped humans are drafted in the same triangular form, however are often solidly filled- in with color, usually black or red and the legs are more often not depicted. Examples are seen in all of the Morris collection, on hides from the Glenbow Museum (AF402, R676.7, AF870, AF1397, and AF4692), and on the Bull Child, Black Boy, Big Moon, and Many Shots robes. Items of material culture and dwellings, such as bows with arrows, more realistically depicted shields, quivers, and tipis are depicted in more detail, especially on the Glenbow Museum examples (AF405, AF402, AF2545, and AF4692). Sun Dance lodges are rarely depicted in hide paintings, but are shown on the Big Moon commission and the Glenbow Museum AF405 robe. Geometric designs, as noted earlier, are rarely depicted with biographic art, and are usually only painted by women. However, geometric designs are mixed with biographic art on the robes of Crop Eared Wolf, Glenbow Museum AF2545, and the Canadian Museum of Civilization piece⁵. The designs on the robe of Crop Eared Wolf are of the box and border type, typically done only by women, and this robe seems to have been first painted by a women, and then reused for the commission of Crop Eared Wolf's war exploits. The rick-rack design around the edge of the Glenbow Museum AF2545 piece may be remnants of felt or trade cloth backing, common on bison hides once used as carriage blankets.

One of the most obvious indications of social change evidenced through the change in artistic style is exhibited in all of the commissioned pieces in the Morris Collection, the Great Northern Collection Railway Collection (Black Boy and Big Moon robes), the Many Shots robe, the robe of Crop Eared Wolf, and most of the robes located at the Glenbow Museum (AF405, R676.7, AF1397, and AF4692) is that of the physical arrangement of the motifs. As noted earlier, bison hides were traditionally worn with the

flap of skin from the head at the left shoulder, the tail at the right, so that the war exploits painted on it may be easily seen from the back to advertise the wearer's status. However, in nearly all commissioned pieces, especially that of the Morris Collection, the war story has an arrangement around the entire outside edge of the robe, with a few scenes centrally located, so that almost half of the motifs would be upside-down if the hide were actually worn in its traditional cultural context. Many later hides were also trimmed, so that the remnants of the legs, head, and tail were no longer attached, thus the trimmed hide no longer had the cultural significance of those that were intact.⁶ The occurrence of upsidedown motifs and trimmed hides are another phenomenon that coincides with the Reservation Era, and especially the periods within this era in which anthropologists, historians, collectors, and tourists purchased or commissioned Native hide paintings.⁷ The most rapid era of social change was during the Reservation Era, which was also the era of the "Great Salvage Stampede" for anthropologists and historians. While most paintings during this era still employed traditional Blackfeet design and are of great ethnological and historical importance, commissioned pieces from this era clearly demonstrate that the item or hide was not created within the traditional context, nor was it meant to be kept within the artist's society.

The Deadmond Bison Robe has been shown to relatively date to the time period of 1835-1890 on the human motif seriation, and slightly later using the horse hoof seriation, at 1890-1900. However, evidence of early motif styles, outlined vs. solidly filled bodies, and background history compiled on the robe may support an earlier date range, tentatively 1870. This robe was most likely *not* a commissioned piece, as evidenced by the

fact that commissioned pieces such as the Morris collection and others were usually drawn by working around the edge of the hide or in a specific area of the hide reserved for a particular artist. Instead, the Deadmond Bison Robe motifs follow a story line connected by human tracks. The exploits follow a format meant to be worn with the head of the hide against the left shoulder, the war story exhibited for the eyes of the warrior's society and to reinforce his status. None of the motifs are painted upside down as with commissioned pieces.

The fact that a large percentage of horses were depicted with no hooves relative to those depicted with hook, c-shaped, or dot hooves seems to have weighed heavily toward a later date of the robe, however the highest percentage of human motifs are clearly rectangular human forms; very few triangular shaped humans are depicted, unlike many robes of later time periods. The Deadmond Bison Robe contains no realistically drawn humans, and very few horse hooves are drafted in the realistic style. Like Wolf Carrier and Big Moon, it is possible the artist may also have been elderly at the time the hide was painted, and drafted the bison robe in the earlier style he was familiar with, as indicated by the use of c-shaped hooves and other early style pictographic elements throughout the robe. However, this scenario seems unlikely when ethnographic evidence, comparisons with both earlier and later robes of better provenance, and the Deadmond family documentation is taken into account.

Conclusion:

Pictographic art has the potential to provide insights into the recent past that cannot be gained from archaeological (material culture) records alone. Information can be transmitted regarding specific events important to an individual or group of people, dress and clothing styles, relationships among various cultures, and the everyday function of specific items of material culture. Biographic art, in particular, is a valuable source of information about individual artist choices, direct cultural histories (as with the case of winter counts and calendars), religious and ceremonial activities specific to a certain culture, and military tactics.

Until recently, little systematic analysis and comparison of robe art with protohistoric-historic period rock art has been undertaken, despite the interpretative potential they share as time counts, records of vision quests, and personal records or biographies. In the past, North American scholars have tended to separate studies of rock art motifs, decorated trade items and utilitarian items, pottery design, and robe and ledger drawings into areas of separate special interest topics. Few works rarely draw *direct* parallels between artistic designs between two or more forms of use.

A cultural tradition spanning both North and South American from Canada to the tip of South America, prehistoric indigenous peoples have inscribed figures onto stone, bone, hides, and other materials. This tradition continued into the historic period and well into the modern era, conveying symbolic or ideographic meaning, communicating individual exploits, religious experiences, and historic events. In particular, the Biographic Art Style of hide pictography has remained a cultural tradition within the Blackfeet culture of the Northern Plains of North America the late 18th century well into the twentieth century, and has its roots in the Early Biographic Style seen in rock art.

This thesis demonstrated the roots of this tradition in Blackfeet culture beginning

with the Early Biographic Art Style of pictography exhibited in rock art, into the historic era after the acquisition of the horse, and into the early twentieth century. Specifically, this thesis focused on bison robe pictography and other hide paintings, an area of pictographic research that has much to provide as both historic and prehistoric research potential, yet has been largely ignored in systematic research in the past.

A previously undocumented bison robe, called the "Deadmond Bison Robe", located in the Broadwater County Museum, Townsend, Montana, was used as a vehicle to address broader issues related to bison robe and rock art. The cultural context of Blackfeet pictography was addressed, as was the provenance and "authenticity" of the Deadmond Bison Robe. Through the use of seriation, ethnographic analogy, and the direct historical method, the Deadmond Bison Robe was relatively dated to the time period 1835-1890, with an approximate date of 1890.

This paper has attempted to bridge a slight gap in the interpretation of rock art, ledger art, and hide paintings using the Deadmond Bison Robe as an vehicle. When studied together, these forms illustrate the long and vivid history, the cultural continuity and process of change not only in traditional art form but of the of the Aboriginal societies that still inhabit this continent. When viewed in this aspect, cultures of the First Peoples are no longer represented as "snapshots in time" that cease to exist after each static representation of a "Historical Period", but rather the societies that continue to adapt and change with contemporary times.

97

Footnotes

1. Further information concerning the chemical compounds of trade pigments as well as contemporary artist's paints can be located in appendix 1.

2. Traditionally, colorants used in art are divided into general classes, pigments and dyes. A pigment is a compound that is suspended in a medium that is bound to a surface. A dye is itself bound to the surface. For example, paints have both pigments and media (in early indigenous art, the media would be anything from berry and other plant juice, to animal tallow and blood- the *binder*) while cloth might be dyed with a compound that binds itself to the surface of the fibers. (Dunn 1996-2000)

3. Big Moon was reported to be eighty years old at the time he painted his exploits used in the seriation [Anonymous, 1996 #92], and Wolf Carrier appeared "to be well into his seventies" at the time of a photograph of him taken in 1913 (Brownstone, 1993:70).

4. George Bull Child's robe depicts the Baker Fight, 1870. He was also one of the most active Blackfeet artists of the period 1920 to 1950 [Maurer, 1992 #123], and eventually took over Richard Sanderville's "tourist business" at Glacier Park Station, Glacier National Park. For an interesting read of Sanderville's enterprise, as well as more biography of George Bull Child, see Ewers (1983:59).

5. The tadpole-like geometric designs on the Canadian Museum of Civilization are most likely symbolic representations rather than decorative, somewhat rare in bison robe paintings [Keyser, 1996 #3]. These tadpole-like designs may represent a Blackfeet creation story. Bob Scriver [Scriver, 1990 #144] notes this design on a Blackfeet shirt in his collection, and states that Blackfeet elders had told him the tadpole design represented "tadpoles of the mysterious underwater people from the myth of creation of the land by Muskrat". Others told him the markings represented scalps, although he was unable to verify either explanation (p.27). This design is also becoming more common in contemporary American Indian art.

6. Brownstone (1993:76) notes that robes containing the head and tail skin flaps were considered of greater value by fur trader and native wearer alike.

7. Stu Connors noted the distinct difference in hide paintings produced as a anthropological and tourist commodity, as opposed to traditional aboriginal use of the item. In his description of the Great Northern Railway Collection [Connor, 1988 #145], Connor noted that they "employed traditional topics and techniques, but were more colorful and a bit more bloody than the Broadwater example". The differences are great, however I have not personally noticed the presence of more graphic scenes in later hide paintings compared to earlier ones; wounds and blood are very common on both human and animal motifs, as an example the Muse de l' Homme robe which clearly shows wounds

on some of the pedestrian humans.

APPENDIX 1

Chemical Analysis of Common Trade Pigments

MINERAL PIGMENTS

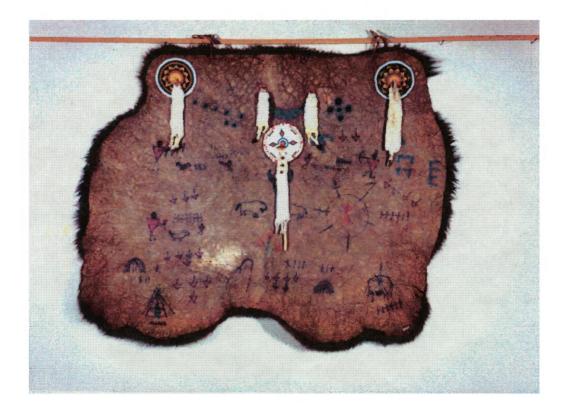
Shown below are some examples of a few of the inorganic or mineral pigments used in paints. Many of these have been in use for centuries.

COMMON NAME	CHEMICAL NAME	FORMULA	COLOR
Cinnabar	Mercury(II) Sulfide	HgS	Vermillion
Cobalt Blue	Cobalt(II) Oxide Aluminum Oxide	CoO-Al ₂ O ₃	Bright Blue
Prussian Blue	Potassium Iron(III) Ferrocyanide	KFe(Fe(CN) ₆)	Deep Blue
Verdigris	Copper(II) Acetate	Cu(CH ₃ CO ₂) ₂	Green
Chrome Yellow	Lead(II) Chromate	PbCrO ₄	Yellow
Burnt Sienna	Iron(III) Oxide in clay	Fe ₂ O ₃	Reddish Brown
Malachite	Copper(II) Carbonate Copper(II) Hydroxide	CuCO ₃ Cu(OH	Green
Cadmium Yellow	Cadmium(II) Sulfide Zinc(II) Sulfide	CdS-ZnS	Lemon Yellow
Rutile	Titanium(IV) Oxide	TiO ₂	White
Chinese White	Zinc Oxide	ZnO	White
Lead White	Lead(IV) oxide	PbO ₂	White
Vine Black	Carbon	С	Black

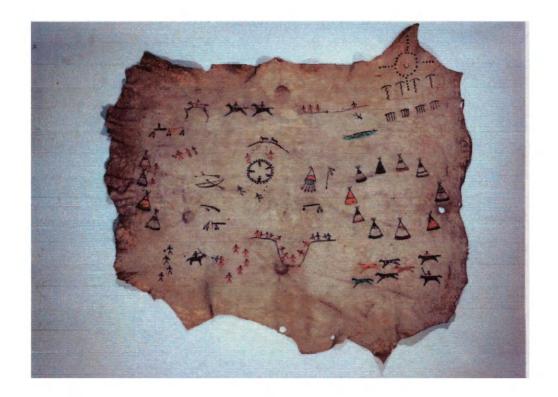
From Dunn (1996-2000)

APPENDIX 2

The Collection

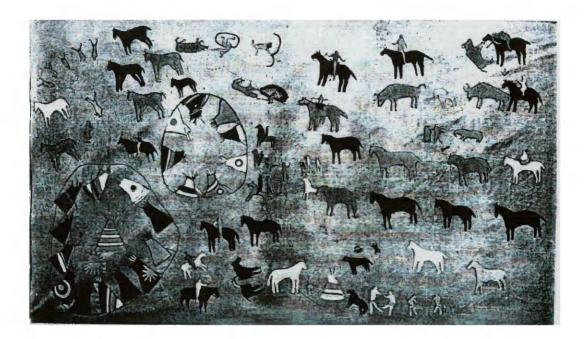


1. Painted bison hide. Collector: Unknown, acquired by the Glenbow Museum in 1963. All other provenience unknown. (Glenbow Museum, Calgary, AF405).

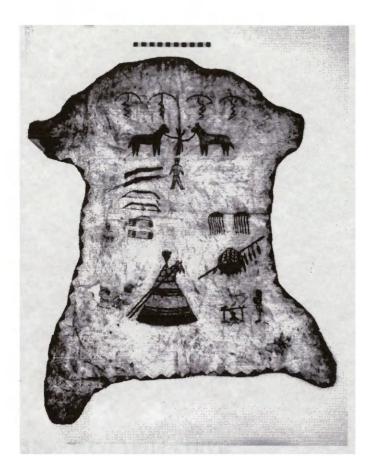


- 2. (Above) Painted elk hide, unsmoked. Collector: Phillip H. Godsell. "Tells of the war exploits of Ben Calf Robe's Father." Acquired by the Glenbow Museum in 1962. All other provenience unknown. (Glenbow Museum, Calgary, AF402).
- (Below) Painted bison hide by George Bull Child, ca. 1930. Collector: L.D. Bax at Browning, Montana. Depicts the Baker Fight, 1870 (The Denver Art Museum, 1985: 106; In Maurer 1992: 220).





4. Reproduction of the original hide painting of Black Boy, in the Glacier Park Hotel, Glacier National Park, Montana, ca. 1913-1914 (Anonymous. "Picture Writing by the Blackfeet Indians of Glacier National Park Montana". Pamphlet published by the Great Northern Railway, St. Paul, Minn.).



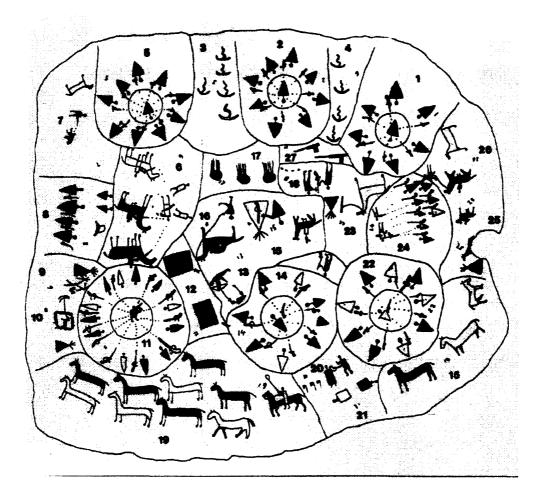
 Blackfoot tipi door flap on calf skin. Collector: Norman K. Luxton, acquired by the Royal Ontario Museum in 1958 (Glenbow Museum, Calgary AF2545). All other provenience unknown.



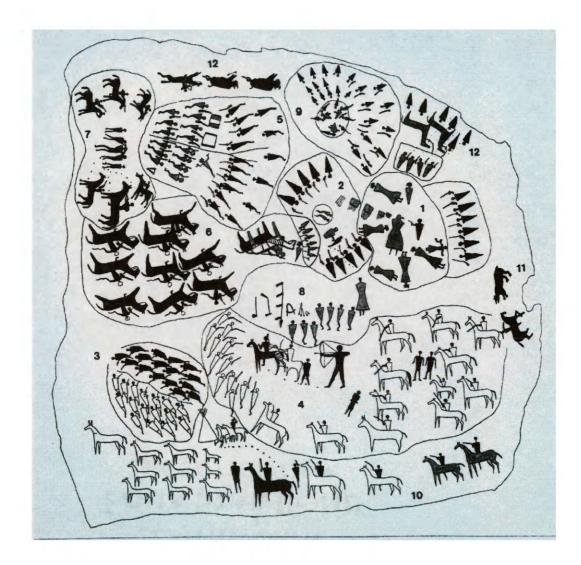
 Painted buckskin, showing the "exploits of Eagle Plume." Nineteenth Century. Collector: George Terasaki. Acquired by the Glenbow Museum in 1969 (Glenbow Museum, Calgary, R676.7). All other provenience unknown.



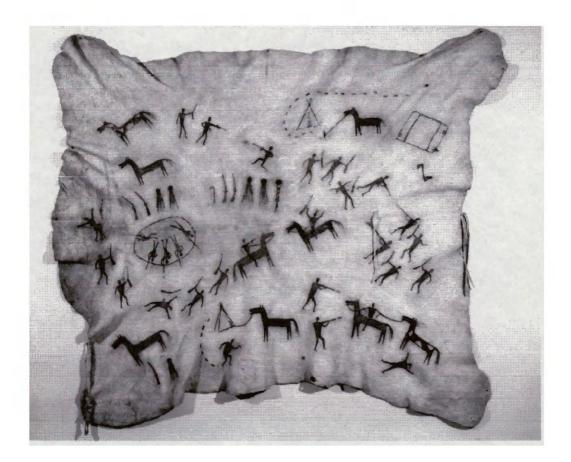
7. Reproduction of the original hide painting of Big Moon, in the Glacier Park Hotel, Glacier National Park, Montana, ca. 1913-1914 (Anonymous. "Picture Writing by the Blackfeet Indians of Glacier National Park Montana". Pamphlet published by the Great Northern Railway, St. Paul, Minn.).



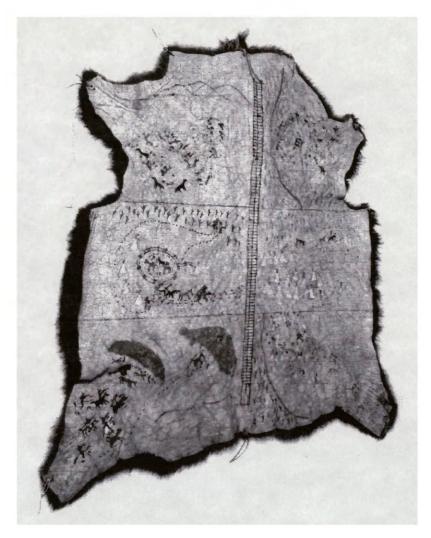
8. Wolf Carrier's Robe, ca. 1909-1910 (Royal Ontario Museum, Toronto, Canada, HK457). Hand traced reproduction by Arni Brownstone (1993:51).



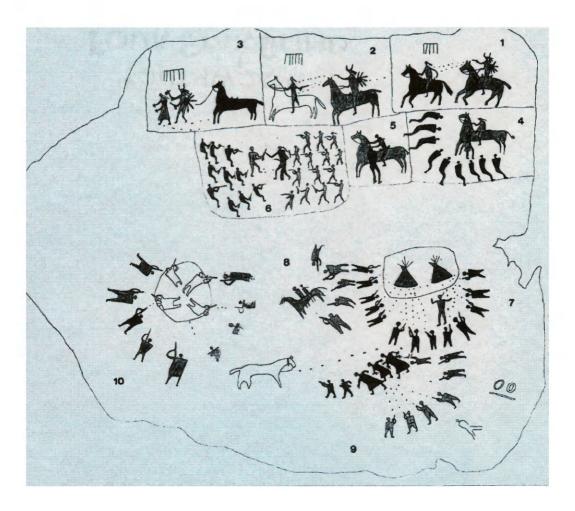
9. Running Rabbit's Robe, painted and translated in August, 1909 (Royal Ontario Museum, Toronto, Canada, HD6541). Hand traced reproduction by Arni Brownstone (1993:47).



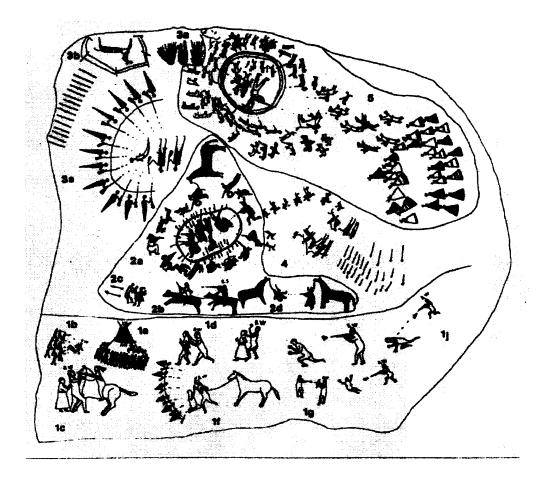
10. Unsmoked mooshide said to depict the "exploits of Raw Eater." Acquired by the Glenbow Museum in 1955 (Glenbow Museum, Calgary, AF870).



11. Painted bison hide, Nineteenth Century. Said to be "the exploits of He Dog." Collector: William P. Fleming. Acquired by the Glenbow Museum in 1962 (Glenbow Museum, Calgary, AF1397).



12. Calf Child's Robe. Painted and translated August, 1909 (Royal Ontario Museum, Toronto, Canada, HK469). Hand traced reproduction by Arni Brownstone (1993:63).



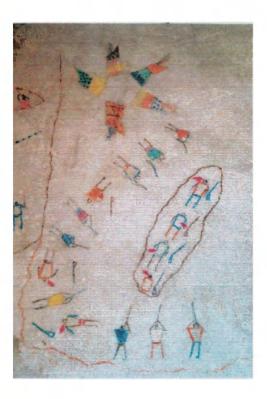
 The robe of "Four Piegan Chiefs": Running Wolf, Big Swan, Bull Plume, and Leans Over Butchering. Painted and translated in 1909 (Royal Ontario Museum, Toronto, Canada, HK461). Hand traced reproduction by Arni Brownstone (1993: 41). *14. Wissler (1911: 38-39). Painted tipi cover documented by Wissler (Not pictured due to lack of quality, duplicatable copy).

*15. Three Suns robe (Not pictured due to lack of quality, duplicatable copy). Painted elk skin war record of Three Suns (later known as Big Nose). Minnesota Historical Society collections (Keyser, personal communication 2000). Cited in Schultz (1962).



16. (Above) Shorty Whitegrass/Sharp Robe, ca. 1892. Collector: Z.T. Daniel at Browning, Montana (Smithsonian Institution, Bureau of American Ethnology).





17. Four views of painted elk or bison hide, no provenience known (Glenbow Museum, Calgary, AF4692). Photographs by Janis Bouma.

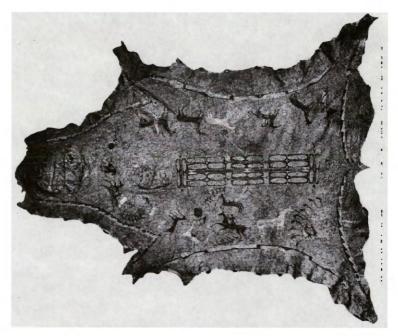






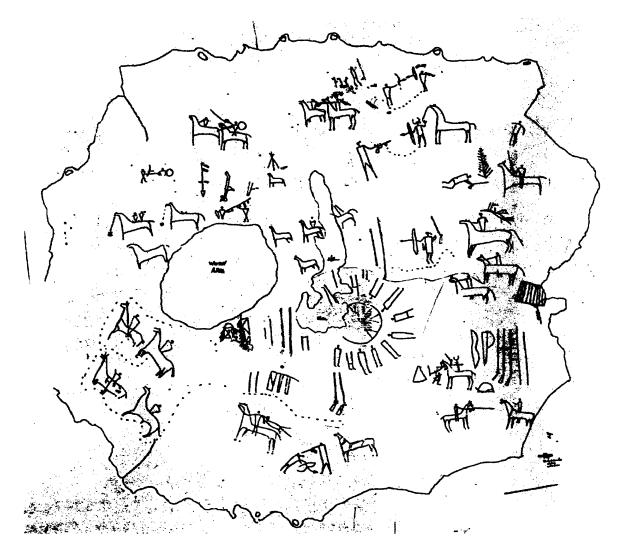
18. (Above) Calf hide depicting the "Life of Many Shots", ca. 1894 (Pitt Rivers Museum, Oxford; In Maclean 1894: pl III).

19. (Below) Painted bison hide, "Coups counted by Crop Eared Wolf, a Minor Chief of the Blood Tribe", ca. 1882 (Royal Canadian Mounted Police Museum, Regina; In Barbeau 1960: 58).

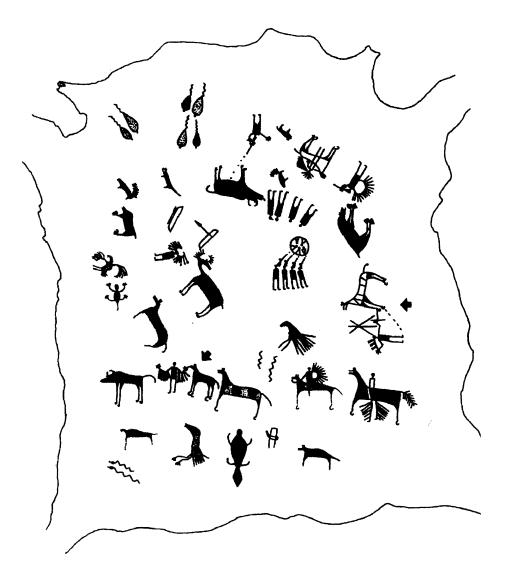




20. Painted deer hide collected before 1898. Collector: Sarah Curzon (Royal Ontario Museum, Toronto, Canada; In Brownstone 1993: 15; Maurer 1992: 217).

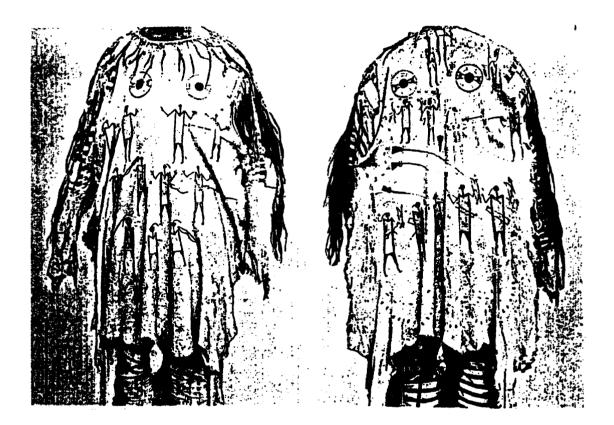


21. The Deadmond Bison Robe. Hand traced reproduction by Janis Bouma and Jim Keyser. Approximately 1890. Broadwater County Museum, Townsend, Montana.



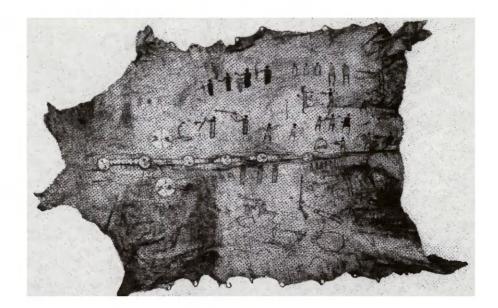
22. The Merriam Robe (Canadian Museum of Civilization, Hull, Quebec; In Keyser 2000: 12; Keyser and Klassen 2001: 272)

- *23. (Not pictured due to lack of quality, duplicatable copy) Bison robe photographed by H.L. Hime in 1858 (Public Archives of Canada, Ontario; In Ewers 1945: 22; 1983: 56).
- 24. (Below) Sweden. Blood shirt collected by D' Otrante in Blackfoot territory, 1843-1844 (Folkens Museum, Stockholm; In Vatter 1927: figure 27).

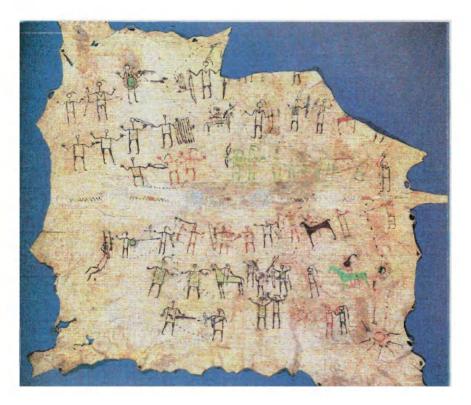




- 25. (Above) "Piegan Blackfeet Man", by Karl Bodmer 1833 (Joslyn Art Museum, Omaha; In Thomas and Ronnefeldt, eds. 1976: 255).
- *26. (Not pictured due to lack of quality, duplicatable copy) Drawing by Karl Bodmer of a Blackfeet warrior's robe in the journal of Prince Maximilian Von Wied, June 30, 1833 (Joslyn Art Museum, Omaha; In Thomas and Ronnefeldt, eds.1976: 17)



- 27. (Above) Painted bison robe from the National Museum of Denmark, Copenhagen, Hc478. Acquired by the National Museum of Denmark in 1861 (Barbeau 1960: 78; Keyser 1996: 35; Ewers 1983: 54, 57).
- 28. (Below) Bison robe from the Muse de l'Homme, Paris, 96.73.1. Collected before 1790 (Horse Capture 1993: 101).



Bibliography

Anonymous

1996 Neuro-psychological Model Provides Big Advance in Scientific Analysis. 11(2) ed. vol. 1999. Mammoth Trumpet.

Arca, A.

1999 Digital Auto-tracing in Rock Art Recording: Applications of Computer Vectoral Design. 11 ed. vol. 1999. Rupestrian Archaeology, "TRACCE Online Rock Art Bulletin".

Ashabranner, B. K.

1996 A strange and distant shore : Indians of the Great Plains in exile. 1st ed. Cobblehill Books/Dutton, New York.

Barbeau, M.

1960 Indian Days on the Western Prairies. Submitted to Bulletin. Copies available from 163.

Baynton, D. C.

1996 Forbidden Signs: American Culture and the Campaign Against Sign Language. University of Chicago Press, Chicago.

Berlo, J. C.

- 1992 The Early Years of Native American Art History. University of Washington Press, Seattle and London.
- Berlo, J. C., American Federation of Arts. and Drawing Center (New York N.Y.)
 1996 Plains Indian drawings, 1865-1935 : pages from a visual history. Harry N. Abrams in association with the American Federation of Arts and the Drawing Center, New York.

Boas, F.

Boas, F.

1964 The Central Eskimo. Nebraska Press, Lincoln.

Bodmer, K., 1809-1893

1984 Karl Bodmer's America. 376 vols. University of Nebraska Press.

¹⁹²⁷ Primitive Art. Harvard University Press, Cambridge.

Brayer, J. M.

1999 Quantitative Assessment of Rock Art Recording. 11 ed. vol. 1999. Rupestrian Archaeology, "TRACCE Online Rock Art Bulletin".

Broadwater County Historical Museum

Deadmond Bison Robe Documentation, various years.

Brownstone, A.

1993 War Paint: Blackfoot and Sarcee Painted Buffalo Robes in the Royal Ontario Museum. Royal Ontario Museum, Toronto.

Callahan, K. L.

- 1997 What's Happening in International Rock Art Studies. Anthropology Department, University of Minnesota.
- 1998 Current Trends in Rock Art Theory. Anthropology Department, University of Minnesota.
- 1999 Shamanism, Dream Symbolism, and Altered States in Minnesota Rock Art. Department of Anthropology, University of Minnesota.

Catlin, G.

1903 (1998) North American Indians: Being Letters and Notes on Their Manners, Customs, and Conditions, Written During Eight Years' Travel Amongst the Wildest Tribes of Indians in North America, 1832-1839 1. Digital Publishing Group, Scituate.

Clogg, P. M.

1999 Digital Image Processing and the Recording of Rock Art. vol. 1999. Rupestrian Archaeology, "TRACCE Online Rock Art Bulletin".

Clottes, J.

n.d. Chauvet Cave. vol. 1998. French Misistry of Culture.

Cohoe

1964 A Cheyenne Sketchbook.

Conn, R.

- 1979 *Native American Art in the Denver Art Museum*. The Denver Art Museum, Seattle.
- 1982 Circles of the World: Traditional Art of the Plains Indians. The Denver Art Museum, Denver.

Conner, S. W.

- 1980 Historic Period Indicators in the Rock Art of the Yellowstone. Archaeology in Montana 21(two):1-13.
- 1984 the capital petroglyphs of Ellison's Rock (24RB1019). Archaeology In Montana 25(2-3):123-145.
- 1988 Letter to Les Davis regarding the Deadmond Bison Robe.

Conner, S. W. and Betty Lou Conner

1971 Rock Art of the Montana High Plains. The Art Galleries. University of California, Santa Barbara.

Cowles, D. C.

1982 White Swan: Crow Artist at the Little Big Horn. In American Indian Art Magazine, pp. 52-61. vol. 7.

Deetz, J.

1977 In Small Things Forgotten: The Archaeology of Early American Life. Anchor Press/Doubleday, Garden City.

Dempsey, H. A.

- 1965 A Blackfoot Winter Count. Glenbow Museum Occasional Paper 1:3-20.
- 1993 Foreward. In Warpaint: Blackfoot and Sarcee Painted Buffalo Robes in the Royal Ontario Museum, pp. 85. Royal Ontario Museum, Toronto.

Dockstader, F. J.

1973 Indian Art of the Americas: A Touring Exhibition Organized by the Museum of the American Indian, Heye Foundation. LaSalleo Litho, Inc., New York.

Dunn, D.

1968 American Indian Painting of the Southwest and Plains Areas. University of New Mexico Press, Albuquerque.

Dunn, K.

1996-2000 Chemistry and Art. vol. 1996. Hampden-Sydney College, Department of Chemistry.

Eastwood, C.

1974 Pictograhic Art of North American Indians: An Interpretive Survey. Master of Arts, Northern Illinois Unversity.

Elrod, J. M.

1908 Pictured Rocks: Indian Writings on the Rock Cliffs of Flathead Lake, Montana. University of Montana. Submitted to Bulletin of the University of Montana. Copies available from 46, Series 14.

Ewers, J. C.

- 1939 Plains Indian Painting: A Description of an Aboriginal American Art. Stanford University Press.
- 1955 The Horse in Blackfoot Indian Culture. Smithsonian Institution, Bureau of American Ethnology Bulletin (159):277-278.
- 1957 Early White Influence Upon Plains Indian Painting: George Catlin, and Carl Bodmer Among the Mandan 1832-34. *Smithsonian Institution Miscellaneous Collections* 134(7).
- 1958 The Blackfeet, raiders on the northwestern plains. University of Oklahoma Press, Norman.
- 1968 Plains Indian Painting: The History and Development of an American Art Form. In *Howling Wolf: A Cheyenne Warrior's Graphic Interpretation of His People*, pp. 64. American West Publishing Company, Palo Alto.
- 1981a The Emergence of the Named Indian Artist in the American West. In *American Indian Art Magazine*, pp. 52-77. vol. 6.
- 1981b Water Monsters in Plains Indian Art. In American Indian Art Magazine, pp. 38-45. vol. 6.
- 1982a The Awsome Bear in Plains Indian Art. In American Indian Art Magazine, pp. 36-45. vol. 7.
- 1982b Artists' Choices. In American Indian Art Magazine, pp. 40-49. vol. 7.
- 1983 A Century and a Half of Blackfoot Picture- Writing. In American Indian Art Magazine, pp. 52-61. vol. 5.
- 1985 The Persistent Tradition: The Hill Collection from the Viewpoint of a Student of Blackfeet Indian Arts and Crafts. In *After the Buffalo Were Gone: The Lewis Warren Hill, Sr. Collection of Indian Art*, pp. 36-45. Northwest Area Foundation, St. Paul.
- 1989 Letter to Troy Helmick, Broadwater County Museum. Broadwater County

Historical Museum records, Townsend, Montana.

- 1992 Plains Indian Art. In American Indian Art Magazine, pp. 37-47. vol. 17.
- 1997 *Plains Indian History and Culture*. University of Oklahoma Press, Norman.

Fagan, B.

- 1991 Ancient North America: The Archaeology of a Continent. Second ed. Thames and Hudson, New York.
- 1991 *The Plains Environment and Climate Change*. Second ed. Ancient North America: The Archaeology of a Continent. Thames and Hudson, New York.

Firnhaber, R. P.

1999 Printing Digital Images. 11 ed. vol. 1999. Rupestrian Archaeology, "TRACCE Online Rock Art Bulletin".

Fisher, J.

1989 Letter concerning Dr. Joallyn Archambault's assessment of the Deadmond Bison Robe.

Furst, P. T.

1982 North American Indian Art. Rizzoli International Publications, Inc., New York.

Grant, C.

1967 Rock Art of the American Indian. Thomas Y. Crowell Company, New York.

Greene, C. S.

1985 Women, Bison, and Coup: A Structural Analysis of Cheyenne Pictographic Art. Ph.D., University of Oklahoma.

Greer, M. and John

1998 A Review of Montana Rock Art Recording Methods. Paper presented at the 56th Annual Meeting of the Plains Anthropological Society, Bismarck, North Dakota.

Grinnell, G. B.

1926 Coup and Scalp Among the Plains Indians. *American Anthropologist* 1 2:296-310.

Hall, H. U.

1926 A Buffalo Robe Biography. *The Museum Journal* 17(1):5-35.

Hanks, L. M. a. J. R.

1945 Observations on Northern Blackfoot Kinship. American Ethnological Society Monographs 9:1-31.

Hanson, C. E. J.

- 1971 A Paper of Vermillion. The Museum of the Fur Trade Quarterly 7(3):1-3.
- 1981 Paint Pigments in the Fur Trade. The Museum of the Fur Trade Quarerly 17(4):1-6.

Heizer, R. F. and Martin A. Baumhoff

1962 Prehistoric Rock Art of Nevada and Eastern California. University of California Press, Berkely.

Helmick, T.

- 1990 Letter to Stu Conners from Troy Helmick concerning provience of the Deadmond Bison Robe.
- 1999 Personal communication concerning history/provenance of the Deadmond Bison Robe.

Horse Capture, G. P.

1993 Robes of Splendor: Native North American Painted Buffalo Hides. The New York Press, New York.

Howard, J. H.

1976 Yanktonai Ethnohistory and the John K. Bear Winter Count. *Plains* Anthropologist Memoir 21(73, part 2).

Kehoe, T. F.

1960 A Fraudulent Petroglyph From Glacier National Park, Montana. *Plains* Anthropologist 5(10):79-80.

Keyser

2000 The Five Crows Ledger: Biographic Warrior Art of the Flathead Indians. The University of Utah Press, Salt Lake City.

- 1987a A Lexicon for Historic Plains Indian Rock Art: Increasing Interpretive Potential. *Plains Anthropologist* 32(115):43-71.
- 1987b Northwestern Plains Rock Art: Pattern or Puzzle? Archaeology in Montana 28(2):1-2.
- 1975 A Shoshonean Origin for the Plains Shield Bearing Warrior Motif. *Plains* Anthropologist 20(69):207-215.
- 1977a Writing-On-Stone: Rock Art on the Northwestern Plains. Canadian Journal of Archaeology (1):15-80.
- 1977b The Central Montana Abstract Rock Art Style. British Columbia Provential Museum, Heritage Record. Copies available from 8.
- 1979 The Plains Indian War Complex and the Rock Art of Writing-On Stone, Alberta, Canada. *the Journal of Field Archaeology* 6(1):42-48.
- 1984 Rock Art North Cave Hills. South Dakota Archaeological Society Special Publication 9:1-51.
- 1989 Ledger Book Art: A Key to Understanding Northern Plains Biographic Rock Art. Memoir 3 ed. Denver Museum of Natural History and the Colorado Archaeological Society, Denver.
- 1990a Tsagiglalal She Who Watches: Rock Art as an Interpretable Phenomenon. Journal of Interpretation 14(2):s-1 through s-4.
- 1990b Rock Art of North American Northwestern Plains: Bollettino del Centro Camuni di Studi Preistorici 25- 26:99-122.
- 1991 A Thing to Tie on the Halter: An Addition to the Plains Rock Art Lexicon. *Plains Anthropologist* 36(136):261-267.
- 1996 Painted Bison Robes: The Missing Link in the Biographic Art Style Lexicon. *Plains Anthropologist* 41(155):29-52.

Keyser, J. D. and George C. Knight

1976 The Rock Art of Western Montana. *Plains Anthropologist* 21(71):1-12.

Keyser, J. D. and Mike Cowdry

1995 Northern Plains Biographic Art: Ethnography Written on Stone. University of New Mexico Press, In Press.

Keyser, J. D. and Mark Mitchell

2000 Decorated Bridles: Horse Tack in Plains Biographic Rock Art. Submitted to Unpublished manuscript in possession of the author.

Keyser, J. D. and Timothy J. Brady

1993 A War Shirt from the Schoch Collection: Documenting Individual Artistic Expression. *Plains Anthropologist* 38(142):5-19.

Klassen, M. A; James D. Keyser and Lawrence L. Loendorf

2000 Bird Rattle's Petroglyphs at Writing-On-Stone: Continuity in the Biograhic Rock Art Tradition. *Plains Anthropologist* 45(172):189-201.

Klassen, M. A.; James D. Keyser and Lawrence L. Loendorf

1998 Bird Rattler's Petroglyphs at Writing-On-Stone: Continuity in the Biograhic Rock Art Tradition. Paper presented at the 56th Annual Meeting of the Plains Anthropologist Society, Bismarck, North Dakota.

Leaky, R. a. R. L.

1992 Origins Reconsidered: What Makes Us Human. Bantam Doubleday Dell Publishing Group, Inc., New York.

Lessard, D.

1990 Defining the Central Plains Art Area. In American Indian Art Magazine, pp. 36-63. vol. 16.

Leuthold, S.

1998 Indigenous Aesthetics: Native Art, Media and Identity. 1 ed. University of Texas Press, Austin.

Lewis-Williams, D.

- 1982 The Economic and Social Contexts of Southern San Rock Art. Current Anthropology 29:201-245.
- 1993 Rock Art and Changing Perceptions of Southern Africa's Past: Ezeljagdspoort Reviewed. *Antiquity* 67(255).

Lewis-Williams, D. and J. M. Loubser

1986 Deceptive Appearances: A Critique of Southern San Rock Art Studies. Advances in World Archaeology 5:253-289.

Muse de l' Homme

1969 Chefs-d'oeuvre des arts Indiens et Esquimaux du Canada/Masterpieces of Indian and Eskimo Art from Canada. Soiete des Amis du Musee de l'Homme, Paris.

Loendorf, L. L.

- 1984 Documentation of Rock Art at Petroglyph Canyon, Montana. Department Of Anthropology, University of North Dakota. Submitted to Contribution. Copies available from 207.
- 1985 The Rock Art Sites in Carbon County, Montana. Department Of Anthropology, University of North Dakota. Submitted to Contribution. Copies available from 224.
- 1990 A Dated Rock Art Panel of Shield Bearing Warriors in South Central Montana. *Plains Anthropologist* 35:45-54.
- 1991 Cation-ratio Varnish Dating and Petroglyph Chronology in Southeastern Colorado. *Antiquity* 65:246-255.
- 1992 AMS 14 Carbon and CR Age Estimates for Two Montana Rock Art Sites. Archaeology in Montana 33(1):71-83.
- 1994 Traditional Archaeological Methods and Their Applications at Rock Art Sites. In New Light on Old Art: Recent Advances in Hunter-Gatherer Rock Art Research, edited by D. S. W. a. L. L. Loendorf, pp. 95-103. University of California, Los Angeles.
- 1998 'Thrown Behind the Tipi Lining' is Found Among the Stars. Paper presented at the 56th Annual Meeting of the Plains Anthropological Society, Bismarck, North Dakota.

MacLean, J.

1894 Picture Writing of the Blackfeet. *Transactions of the Canadian Institute* 5:114-120.

Mails, T. E.

1972 *The Mystic Warriors of the Plains*. 1 ed. Doubleday and Co., Inc., Garden City, New York.

Mallery, G.

1972 *Picture Writing of the American Indians*. Dover Publications Republication Report of the Bureau of American Ethnology 1.

Malouf, C.

- 1950 The Archaeology of the Canyon Ferry Region, Montana. Montana State University.
- 1956 The Cultural Connections Between the Prehistoric Inhabitants of the Upper Missouri and Columbia River Systems, Columbia University.
- 1961 Pictographs and Petroglyphs. Archaeology in Montana 3(1):1-13.

Malouf, C. A and Thain White

1953 The Origin of Pictograhs as Told to Carling Malouf and Thain White by Babtise Mathias In Archaeological Sites in the Flathead Lake Region, Montana: A Symposium. Paper presented at the Montana State University Anthropology and Sociology Papers, Missoula, Montana.

Malouf, C. and Thain White

1953 The Origin of Pictographs in Archaeological Sites in the Flathead Lake Region, Montana: A Symposium. Montana State University. Submitted to Anthropology and Sociology Papers. Copies available from 15.

Martin, M. M.

n.d. Blackfoot Society. vol. 2001. Columbia University.

Maurer, E. M.

1992 Visions of the People: A Pictorial History of Plains Indian Life. University of Washington Press, Seattle.

McFee, M.

1968 The 150 Percent Man, and Product of Blackfeet Acculturation. *American Anthropologist* 70:1096-1107.

Mooney, J.

1910 Siksika, U.S. Bureau of American Ethnology Bulletin 30 2:570-571.

Moore, T. D., Liter E. Spence and Charles E. Dugnolle

1974 Identification of the Dorsal Guard Hairs of Some Mammals of Wyoming. Wyoming Game and Fish Department.

Morgan, D.

1964 The West of William Ashley, Denver.

Muench, D.

1995 Images in Stone. 1 ed. Brown Trout Publishers Inc., San Francisco.

Mulloy, W.

1958 *A Preliminary Historical Outline for the Northwestern Plains* 21. 1 vols. University of Wyoming Publications.

Nesbitt, P. E.

1968 Stylistic Locales and Ethnographic Groups: Petroglyphs of the Lower Snake River. Idaho State University Museum. Submitted to Occasional Papers. Copies available from 23.

Penney, D. W.

1989 Art of the American Frontier: The Chandler-Pohit Collection. University of Washington Press, Seattle.

Peterson, K. D.

1968 Howling Wolf: A Cheyenne Warrior's Graphic Interpretation of His People. American West Publishing Company, Palo Alto.

Peterson, K. D.

1971 Plains Indian Art from Fort Marion. University of Oklahoma Press, Norman.

Phillips, E. M.

1995 The Long History of Vermillion in the Fur Trade. *The Museum of the Fur Trade, Quarterly* 31(1):12-13.

Reynolds, S. F.

1973 A Dakota Tipi. Journal of the Northern Plains 40(4):29.

Rodee, H. D.

1965 The Stylistic Development of Plains Indian Painting and its Relationship to Ledger Drawings. *Plains Anthropologist* 10(30):218-232.

Schlesier, K. H.

1994 Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups. University of Oklahoma Press, Norman and London.

Schultz, J. W. A.

1962 Blackfeet and Buffalo: Memoirs of Life Among the Indians. University of Oklahoma Press, Norman.

Scriver, B.

1990 The Blackfeet: Artists of the Northern Plains. Lowell Press, Inc., Kansas City.

Shipman, P.

1990 Old Masters/Discover Magazine Article. In *Physical Anthropology Annual Additions*, edited by E. Angeloni. vol. 99/00. Duskin/McGraw Hill, Sluice Dock, Gilford, Conneticut.

Sinopoli, C. M.

1991 Approaches to Archaological Ceramics. Plenum Press, New York.

Smith, M. W.

1938 The War Complex of the Plains Indians. Proceedings of the American Philosophical Society 78(3):425-464.

Spoonhunter, J.

2001 The Blackfeet Today. vol. 2001. The Blackfeet Nation.

Sundstrom, L.

- 1987 Vertical Series Rock Art and Its Relation to Protohistoric Plains Indian Symbolism. Archaeology in Montana 28(2):3-17.
- 1998 Gender and Rock Art in Western South Dakota. Paper presented at the 56th Annual Meeting of the Plains Anthropological Society, Bismarck, North Dakota.

Taylor, C. F.

1998 Buckskin and Buffalo: The Artistry of the Plains Indians. Rizzoli International Publications, New York.

Thomas, Davis and Karin Ronnefeldt, eds.

1976 People of the First Man: Life Among the Plains Indians in Their Final Days of Glory: The Firsthand Account of Prince Maximilian's Expedition up the Missouri River, 1833-34.

Trottier, J.

n.d. Pictographic Art: One of America's Oldest Art Traditions, pp. 1-14.

Walton, A. T., John C. Ewers and Royal B. Hassrick

1985 After the Buffalo Were Gone: The Louis Warren Hill, Sr., Collection of Indian Art. Northwest Area Foundation, St. Paul.

Whitley, D. S. and L. L. Loendorf

1994 New light on old art : recent advances in hunter-gatherer rock art research. Institute of Archaeology University of California Los Angeles, Los Angeles.

Wissler, C.

- 1911 The Social Life of the Blackfoot Indians. American Museum of Natural History Anthropological Papers 1:1-64.
- 1912 Ceremonial Bundles of the Blackfoot Indians. American Museum of Natural History, Anthropological Papers 7(2):65-289.
- 1916 Costumes of the Plains Indians. Anthropological Papers of The American Museum of Natural History 17:39-92.
- 1916 Riding Gear of the North American Indians. Anthropological Papers of The American Museum of Natural History 17:1-38.
- 1916 Structural Basis to the Decoration of Costumes Among the Plains Indians. Anthropological Papers of The American Museum of Natural History 17:93-114.