Out of Sight, Out of Mind:

The Reposition of Archaeological Collections in Canada

BY

Barbara J. Winter, M. A., Carleton University, 1983

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ABSTRACT

If archaeology is a science, the issues of replicability and the responsibility for the preservation of collections and their associated documentation as evidence and as scientific data are critical. In addition, the public funding of archaeology brings a fiduciary responsibility to preserve the results of archaeological investigation.

Given these factors, it is surprising that there are no explicit, widely accepted guidelines for the post-repositional curation of archaeological collections. While guidelines have been developed for collections in other disciplines, curation standards for archaeological collections remain rudimentary. The needed guidelines must be developed within the legal and fiscal context in which they will be administered.

In this dissertation the legal context of archaeological curation in Canada is briefly examined, recent fiscal conditions affecting curation are discussed and the actual practices of curation in several Canadian repositories are examined. Finally curation standards for archaeological collections in Canadian repositories are developed. These guidelines are a platform for further discussion. After extensive review by both archaeologists and those employed in the curation of collections, the guidelines will be revised and presented to the Canadian Archaeological Association and the Canadian Museums Association.

Vladimir: Yes, but not so rapidly.

Samuel Beckett, Waiting for Godot, Act I

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Hurons, Scarborough College, the University of Toronto, the Vancouver Museum and the Woodland Cultural Institute.

In each repository visited I was permitted access to collection storage areas and the collection information systems. While touring the repositories, I examined the registration and cataloguing systems, location tracking systems, computerized inventory control, collection storage areas and collection organization. I was allowed to thoroughly examine and test the curation systems in 23 institutions. I appreciate the rare opportunity to get a 'behind the scenes' look at so many institutions in a short period of time. It helped me to develop a snap-shot of the present state of archaeological curation in Canada.

The following people assisted me in developing these guidelines, 40 giving interviews lasting a minimum of 2 hours, some extending over several days. I am grateful for their input. Dr. Charles Arnold, Lucie Boivin, Judy Bedard, Margaret Bertulli, Dr. Jacques Cinq Mars, Dr. Donald Clarke, Paul Collins, Gillian Conliffe, Dr. Jerry Cybulski, Adrienne Davies, Gary Dickson, Dr. Ian Dyck, Dr. Barbara Efrat, Kimberly Figures, Patricia Freeman, Stacey Girling, Dr. Bryan Gordon, Tara Grant, Dr. Margaret Hanna, Jennifer Hamilton, Christopher Hanks, Tom Hill, Dr. Stephen Inglis, Dr. Robert Janes, Olive Jones, Erica Klaus, Dr. Olga Klimko, Brian Linneaus, Judy Logan, Dr. David Keenleyside, Dr. Marti Latta, Odette Leroux, Dr. George MacDonald, Lynn Maranda, Judith Marsh, Kevin McAleese, Heidi Moses, William Moss, Dr.

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Chapter 1   Introduction

My dissertation research focuses on the museum aspects of archaeology - specifically the curation of archaeological collections. After archaeological research is completed, after the report is published and the next project well planned, what happens to the samples, the artifacts collected and their associated documentation? In most provinces, legislation requires that this archive of the evidence of archaeological investigation is reposited in a museum or other custodial institution such as Parks Canada. However, not every province requires reposition, and there are, to date, no widely accepted standards of care. In this dissertation I examine the relation between archaeological theory and museums, outline archaeological curation, examine the context of archaeological curation in Canada, survey current curation practices in Canada and propose a first draft of guidelines for archaeological curation. It is anticipated that these guidelines will be debated and re-worked several times in a variety of venues. I intend to present these re-worked guidelines to the Canadian Archaeological Association and the Canadian Museums Association with a view to their formal adoption.

Provisions of legislation and the requirements of scientific replicability demand a careful recording of the evidence produced by an archaeological investigation. Replicability is not to be understood as checking the research done by the original investigator. Rather the preservation of the collections is

the preservation of evidence supporting the conclusions drawn. Data are recorded, analyzed, synthesized and reported in published site reports, and these reports are kept on file in provincial government branches of archaeology. The primary data, the field notes, photographs, samples, level bags, artifacts, *etc.* are reposited in institutions designated by permit. The preservation of these as evidence supporting the conclusions drawn and the interpretation of the site is an essential part of archaeology as a scientific discipline.

This recognition of the scientific value of archaeological collections may also be found in the repositories which curate archaeological collections. Unfortunately, this emphasis is rarely explicitly detailed in a manner which allows for the measurement of performance against either quantitative or qualitative standards. Though many institutional repositories have policies that refer to following accepted standards for the discipline, more often than not these standards are traditional practices rather than principles or measures established by a guiding authority such as the International Committee on Museums or the Canadian Archaeological Association. Because of these vague 'standards', it is difficult for repositories to know whether they are fulfilling policy objectives. Canadian archaeological repositories currently have no objective measure against which they may judge their curation practices.

It seems to me there is a great deal of misunderstanding between museologists and archaeologists. There is not a great appreciation among

either group for the interests and mandate of the other. Some archaeologists have expressed dissatisfaction at the actions of museum staff, accusing them of neglect of the collections and an abandonment of their legal responsibilities. Some museologists look upon archaeologists as collectors of great volumes of worthless material which museums are then required to curate. While these opinions are often spoken, they are rarely written. With this thesis I hope to dispel some of these misperceptions, examining the constraints under which collections are reposited and curated, outlining both what should be done and what is being done, and developing some guidelines for the appropriate curation of archaeological collections.

The development of the standards offered in this dissertation is important for the following reasons:

1 Legislation

Archaeological collections are held under legislation. In some jurisdictions, repositories have statutory obligations to the preservation of the collections and their accompanying documentation. This has ramifications in legislation and policy, and can leave a repository open to legal action if collections are not preserved.

2 Development of curatorial standards

In a climate of fiscal restraint, museums must work efficiently. Both what is accomplished and how it is accomplished is currently open to review, with a

goal of streamlined objectives and procedures. The mandate of many repositories is being examined and re-written, often with a more limited scope and area of responsibility, reflecting the realization that it is not possible to curate and preserve everything in an ideal manner. Instead, many repositories are choosing to do a more effective job of preserving materials from a defined, limited geographic area. While this may improve the management of archaeological collections originating from the geographic area, it also orphans collections from sites outside this defined area, jeopardizing the physical and intellectual coherence of these collections.

The trend toward efficiency of collections management has also prompted the re-organization of personnel structures and reporting relationships in some repositories, often splitting collections management from the research functions of the institution. This restructuring is usually accompanied by reductions in staffing levels. While restructuring delegates the routine tasks of collections maintenance to information specialists, conservators and managers, it appears to be impeding researchers' access to collections.

3   Obligation to science

If archaeology is a science, the often cited aspect of replicability must be satisfied. While one cannot dig a site that has been previously excavated, one must preserve the results of that excavation for future reanalysis. The

preservation of the collections in an accessible form is a necessary pre-condition of re-examination.

4   Revision of Canadian history and the preservation of historical data

Archaeological collections have been largely interpreted by university and museum researchers and historians who are not of First Nations ancestry. First Nations archaeologists and historians are now qualifying in the university system. As the First Nations redefine the way Canadian history is written, they will challenge the accepted versions of history. They may want to go over the basis of the accepted versions - the archaeological materials and field notes kept in repositories. Collections must be preserved to a consistent standard in order to allow this review by First Nations and other future scholars. If repositories are negligent, and evidence is lost, an irretrievable portion of the basis of Canadian history is lost. Future re-evaluations may be impossible.

5   Repatriation

In the day to day practicalities of curation, many archaeological collections are currently cared for in an *ad hoc* fashion rather than according to widely accepted standards. Indeed, these standards are beginning to be written only with this dissertation. Some common curation practices are detrimental to the site archive, for example, when pieces are removed for research, school programmes or exhibits, and never re-integrated into the site collection storage. The pieces removed are usually the 'nicer' ones, the more important, more

exhibitable ones. These are the very pieces of most interest to a First Nation seeking repatriation of the collection. If repositories don't get their curation in order, they may be open to legal action from groups wanting to use or repatriate objects which have been entrusted to the repository's care.

6   Fiduciary responsibility and the expenditure of public funds

Much of the archaeological excavation in Canada is publicly funded. If public funds are spent to acquire the collections and documentation, and they have been curated in public institutions, curators must ensure that this public trust is not violated through physical or intellectual damage or destruction of collections.

This dissertation is therefore important to many groups, archaeologists, museologists, historians and First Nations. In my opinion it is a necessary link between archaeologists and those who curate and use collections after the initial analysis.

Literature review

Until recently, the only comprehensive treatment of these issues I have found in the archaeological literature has been in books written by museologists dealing with archaeological collections (Robertson 1987, Schadla-Hall 1987, Roberts 1988, Pearce 1990). All of these focus on archaeological curation in Britain, and have little relevance to prehistoric Canadian collections.

A position informed by the needs of the discipline is called for in legislation, but has not been addressed in the archaeological literature until the 1994 publication of the Society for American Archaeology "Ethics in American Archaeology" by Lynott and Wylie (1995b). Several papers included in this collection come close to dealing with the issues of the ethics of archaeological curation, most notably Parezo and Fowler's "Archaeological Record Preservation: An Ethical Obligation" (1994). Even here, however, explicit standards that would provide a guide in the day to day curation of collections are not detailed.

While such work has begun in Britain and the United States, no standards have been developed in Canada. While some might suggest these standards may be adopted across national boundaries, there are differences in legislation that would make this difficult. British laws, such as those of Treasure Trove, and American legislation regarding private property affect the legal status of many archaeological collections. The legal status of collections affects curation practices. While an international commonality may be found in the desires of the archaeological profession to preserve collections as scientific evidence, the differences in legislation require that specific guidelines be developed and followed in each country. Canadian repositories need specifically Canadian guidelines which deal with the idiosyncrasies of Canadian legislation.

Objectives

The objectives of the research are to examine the present state of archaeological curatorial practices in Canada, and to relate these to the relevant heritage legislation. Legislation calls for standards to be developed by the relevant discipline. While this has been done for some parts of museum collections, for example biological and geological collections, there has been no systematic establishment of disciplinary standards of curation for archaeological collections in Canada.

Despite the lack of systematically developed and articulated standards, archaeological curation policies refer to such standards (for example, Royal Ontario Museum 1982, University of British Columbia Museum of Anthropology 1982, Canadian Museum of Civilization 1992, Parks Canada 1994b). Several museums have endorsed policies that outline general curatorial standards applicable to all their collections. As I discuss below, archaeological collections are quite different from other types of collections. These differences determine some aspects of curatorial practice. Therefore these curatorial procedures, while they may do quite well for paintings and tea cups, may not work toward the preservation of archaeological collections.

In this dissertation, I develop guidelines for standards of care for archaeological collections which are consistent with, and are developed from,

an archaeological perspective as well as a museological one. I recommend national guidelines for the care of these collections. To be effective, these guidelines must be archaeologically valid, that is, they must be consistent with the goals of the discipline, and attainable within the limits of the fiscal and human resources available to Canadian museums.

Research Questions and Methodology

There are three basic research questions to be answered:

1. What are the standards of curation required by the archaeological profession to ensure the continued usefulness of archaeological collections housed in repositories?

2. How do legislation, policies and procedure manuals used in repositories reflect these standards?

3. How do actual curation practices used in repositories in Canada, and the fiscal environment affect these standards?

In order to answer question one, first I examine a number of proposed standards of curation. These may be found in two areas - the 'grey literature' of archaeological collections management in-house policies and procedures manuals and the professional expertise of archaeologists. Next, I review the archaeological literature for a series of basic principles of curation, paying particular attention to this 'grey literature'.

I use these principles to adapt the guidelines developed by the Society for the Preservation of Natural History Collections for the curation of biological systematics collections. While many of the Society for the Preservation of Natural History Collections guidelines are useful, some are not. For example, a principle of archaeological curation is that all information, samples, artifacts, *et cetera* from one archaeological site should be curated at one institution. The collection should not be split up between institutions if at all possible. However, this principle makes little sense in many natural history collections where it is irrelevant if all the specimens from a specific lake are divided between several institutions.

In developing comprehensive standards for archaeological curation, I first adapt those developed for natural sciences collections, then review federal, provincial and territorial legislation dealing specifically with archaeological collections and concerns. I briefly outline the existing legislation, as well as examine the current administration of the legislation and any recent proposed revisions to existing legislation. A comprehensive analysis of Canadian heritage legislation is beyond the scope of this dissertation. The legislation is examined only to establish the broad context for archaeological curation.

In addition, wherever possible, I examine institutional policies, procedural guidelines and administrative directives arising from legislation. Proposed or

adopted revisions to existing policies, and the timing of policy generation may be significant. Policies from non-governmental sources such as the Assembly of First Nations and the Canadian Museums Association which have specific interest in archaeological collections are also examined.

With this context established, I next examine the actual curation practices used in repositories in Canada. During the summer of 1995, I contacted a wide variety of people associated with the issue of archaeological curation, and visited a number of institutions that collect, conserve and curate archaeological collections. Some were official repositories designated under legislation, while others were museums or research associations. The people contacted and the institutions visited are listed in the acknowledgments.

I interviewed people involved in the development of federal and provincial heritage legislation and policy, several provincial archaeologists, archaeologists who create collections for reposition as a by-product of their research, and a variety of curators, administrators, conservators and technicians working in repositories. I selected several archaeologists who have examined or re-examined collections which have been curated in a repository for a number of years. Following counsel given in my colloquium, I did not seek to interview a representative sample of all people associated with the issues, but tried to focus on recognized 'experts' - archaeologists and others who have an acknowledged

interest in this area and have experience in various aspects of archaeological curation.

In the structured interviews and repository tours I investigated the following areas:

1   the characteristics of the permit system and the manner in which collections are selected for reposition;

2   the parameters of legislation;

3   the requirements of legislation according to disciplinary (archaeological) standards and;

4   a survey of curation practices and procedures in use in the repository

These areas were examined through a questionnaire, as discussed in Chapter Five. Not all aspects of the questionnaire were applicable to each interviewee. In addition, some of the answers could not be supported. For example, when questioned about the existence and provisions of policies governing the curation of archaeological collections the most frequent answer was "There must be one around, but I've never seen it" or "I wrote one about ten years ago, I'll see if I still have a copy."

With a draft of the standards of curation required by the discipline and an examination of the relationships between these standards and Canadian legislation, repository policies and some procedures manuals in hand, the

guidelines were modified through the results of interviews with a number of archaeologists, archaeological collections managers and others associated with archaeological curation. The legislative and policy overview was supplemented by these interviews in order to assess the issues, efficiencies and problem areas of archaeological curation. I wanted to take the principles, the motherhood statements presented in the literature, legislation and policies, and see how these are in fact operationalized. How do these policies actually work in repositories?

Methodology for the selection of a sample of repositories.

I examined several kinds of archaeological repositories in Canada. The process of selecting those repositories to be sampled was lengthy, with false starts. As most repositories are responsible to provincial legislation, I initially selected repositories from each province. This approach was abandoned as it missed several categories of repositories, such as those run by First Nations and several universities, and included a number of institutions with similar problems and issues. I then selected repositories with a variety of governance structures. The inclusion of these repositories lead me to delineate three models of institutional curation employed in Canada. These are a centralized repository, a distributed network, and a negotiated division of collections. A centralized repository is maintained by the provincial government as the sole archaeological curation facility in the province. A distributed network usually

involves the curation of collections in a wide variety of venues, including local museums. A negotiated division of collections is the formal division of the archive between two or three institutions. Each jurisdiction was examined to see if it fit this model.

At each repository, I interviewed staff and worked with a sample of the archaeological collections and collections management system. By interviewing staff I hoped to ascertain the perceived mandate and goals of the repository. When available, I obtained copies of any relevant policies and procedures manuals. I interviewed both upper and middle management who make policy and those staff who actually work with collections on a day to day basis.

The results of the questionnaire - based interviews are listed in Chapter Five. Given the open-ended nature of the questionnaire, and the wide variety of people and institutions represented in the sample, the procedures employed in the analysis of these results are very simple. A presence / absence and frequency count of the responses was done, and is reported in Chapter Five. The most important result of the interviews was not the comparison of curation practices employed, but the reflections of the people interviewed, which represent several centuries of combined experience in archaeological curation.

In summary, I developed standards of care for archaeological collections which are consistent with and developed from an archaeological perspective

rather than a museological one. This was done through consultation with and interview of a wide variety of those involved with archaeological curation. From this basis, I developed national guidelines which are archaeologically valid, consistent with the goals of the discipline, and are hopefully attainable within the fiscal and human resources available to Canadian repositories. These are presented in Chapter Six.

Chapter outline

This first chapter introduces the topic of archaeological curation, reviews the methodology employed in the study and concludes in this chapter outline.

Chapter Two provides an overview of the relationships between archaeological theory and archaeological curation in museums. While these two areas are often thought to be quite distinct from one another, I demonstrate the linkages between them, showing how the structure of museums, exhibition foci and curation programmes reflect broad developments in theory over the history of the two disciplines. Archaeological curation is shown to be inextricably linked to archaeological theory.

Chapter Three describes archaeological curation, cites several parallel developments

in the development of curation standards for natural history collections in the United States and Great Britain, and outlines recent work in this direction by the United States Corps of Engineers and American legislation. It briefly introduces the context of curation within the legal, museological, archaeological and socio-political situation in Canada. A brief outline of terms used and processes undertaken in the life-cycle of archaeological curation ends the chapter.

Chapter Four situates archaeological curation in Canada within the context of current legal and fiscal environments.

Chapter Five provides a snap-shot of archaeological curation over a large number of institutions at a point in time. It summarizes the results of the questionnaire based interviews conducted in Canadian archaeological repositories during the summer and fall of 1995. The responses are ranked and discussed.

Chapter Six lists guidelines for archaeological curation developed in this study within four major categories: the characteristics of the repository, curation procedures, professional judgment and professional relationships.

Chapter Seven gives a summary of conclusions and future directions. This is followed by the cited references.

Chapter Two   Archaeological theory and archaeological curation

In this chapter the relationship between archaeological collections management and archaeological theory is examined. One of the defining characteristics of archaeology is its tangibility. Unlike historical or anthropological theory, archaeological theories and constructions of the past must deal with material culture. However, the methods and theories archaeologists have used to interpret the archaeological record have changed drastically over the history of the discipline. This can be illustrated, for example, in the differences between processual archaeologists, who have been said to view the archaeological record as a fossil record produced by adaptation and cross-cultural laws, and structural or contextual archaeologists who view the archaeological record as a text comprised of material symbols (Patrik 1985:28). Both the definition of the archaeological record and the research questions brought to that record have changed through time.

In terms of scope, the archaeological record has been re-defined in an ever broader way. At the inception of archaeology the remains of past cultures were limited to easily recognizable artifacts - stone tools, wrought metals, architectural features, and the like. These were the objects that came to be curated in museum repositories. With the beginnings of archaeological excavation some artifacts were highly valued. Archaeologists valued objects of intrinsic monetary value - gold, silver, jewels, *etc.* as well as those appreciated

for their aesthetic qualities, such as statuary and fine ceramic wares. For other objects, even the fact of their human manufacture was not recognized, or they were considered unimportant. For instance, some types of stone tools, such as projectile points and scrapers, came to be recognized quite early, while other tool types were defined much later. In this antiquarian period artifacts were taken to be the whole of the story with little regard for even their physical context in the site. Over time, more and more artifacts and features were added to the list - "axe heads without handles, whorls without spindles, hinges without doors and unfurnished rooms" (Childe 1956:12). As these artifacts were valued, they were added to museum collections and added to the 'want' list of collecting expeditions.

Similarly, the kinds of questions asked of curated collections has changed from simple questions of provenance and date to more complex understandings of statistical sampling and contextualization in order to construct models of past societies more completely. The redefinition of archaeological collections is reinforced in both the process of initially selecting which portions of the archaeological record will be preserved, in collections management practices which selectively preserve and interpret that portion of the record which is reposited, and in the questions which are asked of reposited collections. The impact of the theoretical perspective of the researcher may be found in the questions asked, the research strategy formed to answer those questions, the methods chosen and the manner in which they are used, the

organization of the resulting data (both collections and documentation), the selection of a repository, the manner in which a collection is reposited, the curation practices used in the repository and the uses to which a reposited collection may be put.

Researchers using reposited collections require information systems which will answer their data requirements quickly. The theoretical approach used by the researcher determines the questions asked. For example, a culture historian writing a text or regional culture sequence will look for 'type artifacts' which illustrate the different successive cultures. In this case 'type artifacts' will be privileged, described and cross referenced with readily available images. This is very different from the information system requirements of a processual archaeologist. An archaeologist investigating subsistence technology within a processual paradigm, may require a detailed catalogue of all tools and related artifacts, their provenance, as well as zooarchaeological and ethnobotanical remains. These may be defined quantitatively. They may then be statistically manipulated to produce information regarding human adaptation to varying environments over time. A researcher investigating social or gender relations will require cross-indexed information on the social context of each object catalogued. These varying information needs require a repository to be flexible and open-ended in its information management and curation practices.

Archaeological theory is not the only factor at work in defining curation practices. Canadian archaeological repositories are generally associated with museums, universities or government departments, either as an integral part of the organization or at arm's length. Fiscal restraint within the larger institutions has forced new curation practices, for example the amalgamation of repositories with a provincial museum. Therefore, this dialogue between archaeological curation and archaeological theory is influenced by other voices - museological principles of collections management and research values for collections as well as the legal and fiscal environment of the repository.

Archaeological theory and artifacts

There have been at least six distinct ways of defining, interpreting and understanding the archaeological record. These have differed from one another in fundamental ways:

-Artifacts are the residues of human activity in the past, which may be interpreted directly.

-Artifact patterning directly reflects past human behaviour; by analyzing artifacts and other parts of the archaeological record, such as faunal remains, an understanding of the systems of past societies may be found. Artifacts are seen as type specimens with time-space correlates.

-The archaeological record is modified during and after deposition, such that site formation processes distort the evidence, making direct deductions from the record impossible in most cases.

-Artifacts are mental templates; their analysis reveals the ideology of past cultures.

-Artifacts are functional, but also are material symbols, a synchronic mode of communication and a structuring device through which interest groups and individuals order themselves and each other.

-Artifacts are used diachronically by human agents, bringing past ideologies, values and symbols into the present, where they are used as active structuring agents in present situations.

The treatment of artifacts can be seen as a marker indicating changes in theoretical frameworks over the history of the discipline. Like concepts of time, concepts of the use of artifacts have a profound effect on archaeological interpretations (Stahl 1993). The major periods of American archaeology may be characterized by the ways artifacts are treated. The theoretical goals of these periods can be summarized by the way material culture is used and attitudes toward the archaeological record dominant at the time.

In this chapter I focus on the predominant form of archaeological repository, the museum. University curation facilities are often in the form of museums. Government archaeology branches, primarily concerned with site development mitigation, may curate their own collections, but often turn these collections over to a provincial government museum repository. Archaeology and museums have been integral parts of each other, each influencing the

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development of the other. One of the major points of connection between the two are artifact collections. Archaeologists produce artifact collections. Museums both actively collect and subsequently modify collections through the processes of curation and public interpretation. Some archaeologists use previously excavated collections curated in museums in their research.

The roots of both archaeology and museums may be traced to a western view of linear, evolutionary progression through time (history) and to the materialist and capitalist economic structures which developed in Europe and America in the last two centuries. Both museology and archaeology have gone through a series of tandem theoretical shifts. In this chapter I examine the use of artifacts in archaeological interpretation, from the early days of naive realism through culture history and processual archaeology to critical theory and other post-modern understandings of material culture.

The Classificatory Descriptive Period

In their history of American archaeology, Willey and Sabloff (1974) characterized the period from 1840-1914 as the Classificatory Descriptive Period. This coincided with a 'boom' period of collecting archaeological and ethnographic artifacts as the major museums were established and first major collections assembled. Museological principles of collecting and classification were strongly influenced by European, particularly English precedents.

The influence of Darwinian evolutionary theory, taxonomic developments and the documentation of species variation and adaptation led to the compilation of natural history collections that catalogued the range of variation found in particular species. These concepts influenced anthropological collecting in two ways. Many museums administratively grouped natural history and anthropology, leading to streamlining and conformity at a bureaucratic level. In addition, many curators of anthropology were trained in the natural sciences, and were philosophically disposed to treat anthropological collections as they had been trained to deal with natural history collections.

The first rudimentary attempts to classify and organize artifacts were made quite early. For example the three age classification of stone, bronze and iron can be traced to C. Thomsen at the Danish National Museum. The conceptual leap that took the classification of objects by materials to a chronological system was in place in the galleries of the museum by 1836 (Pearce 1990: 26).

In England, by the 1880's Augustus Henry Pitt-Rivers had amassed a large collection of material culture relating to social history, which included some archaeological material. Upon inheriting a large estate, he began excavations of a site on its grounds. His concepts of material culture were derived from Darwinian evolutionary progress, as artifact types developed through a process

of selection which modified their forms according to discoverable natural laws. These laws were seen as deterministic, and there was no room for human choice.

His ranking of artifacts from simple forms to more complex was demonstrated in the museum exhibition scheme he established (Chapman 1985). He exhibited the collection in a rotunda, the circle of the building representing the globe. Pie shaped wedges held artifacts from different parts of the world, ranked from 'Paleolithic' in the central exhibitions to 'modern' around the periphery (Stocking 1985). Pitt-Rivers' eventual donation of the collection to Oxford in 1883 was conditional upon the permanent preservation of the collection in his exhibition arrangement. He obviously valued his classification and interpretive system as highly as the artifacts themselves, unusual in his day (Pearce 1990:25-8).

Pitt-Rivers' collection was one of the first to be organized along systematic lines. He procured examples to illustrate specific principles, rather than to accumulate ever finer and more valuable objects. With his system began the concept of directing collecting activities to 'fill in the gaps' in a collection, a principle that has motivated curators ever since and has been enshrined in many formal collecting policies adopted by major museums.

The development of Boasian historical particularism paralleled taxonomic developments in biology. In North America, federal governments viewed native peoples as a vanishing race. Federally supported anthropological programmes rushed to document these endangered traditional native cultures. This proceeded in concert with anthropological theory as Boas developed cultural relativism, with its emphasis on the documentation of cultural variability and historical particularism, with its emphasis on the detailed cataloguing of differing lifeways and material culture.

Boas not only collected material culture, but extended this natural history-like catalogue of examples of human cultural diversity to the collection of human remains from various native groups. Remains with evidences of cultural modification, such as trephinations or cradleboard binding to alter the shape of the cranium were prized, and fetched a higher price (Cole 1985). The intensity with which material culture collections were assembled was paralleled in the collection of human remains and the assembling of large physical anthropology collections.

This is perhaps best illustrated in Boas' work with the Field Columbian Exhibition in 1893. Mounted to celebrate the quadricentennial of Columbus' "discovery" of the New World, the exhibition included a tribute to the 'disappearing Indian'. Boas traveled extensively throughout North America, particularly in the west, amassing artifacts, human remains, architectural

features and even living native people to illustrate the range of diversity of pre-Columbian America. These people and objects represented a timeless past, living fossils harking back over 400 years. His exhibition scheme was the simple display of the range of variation in large halls, coupled with demonstrations of technology and ritual by native people. There was no evidence or discussion of the rapid and dramatic cultural changes which the First Nations had experienced. They were exhibited as people with static cultures, locked in the distant past (Cole 1985).

The information system used by Boas was a simple ledger inventory of artifacts classified by function, with as complete provenance as possible. Boas was meticulous in his attention to details of the origin and social context of each artifact, collecting oral histories relating to objects wherever possible. These were archived and cross-referenced with the collection. This attention to detail in artifact catalogues was fully compatible with the tenets of historical particularism.

The Classificatory - Historical/ Chronology Period

During Willey and Sabloff's Classificatory - Historical/ Chronology Period (1914 - 1940) artifacts were seen as tools in developing chronologies and filling cultural sequences. Many examples, such as the work of Henry Collins on St. Lawrence Island, may be found. Large numbers of artifacts were needed to fill out typologies and regional sequences.

The middle portion of this period coincided with another period of major collecting activities of both American and Canadian museums. At the beginning of this period World War I diverted resources away from anthropological activities. In Canada, the fire in the Houses of Parliament forced the museum staff out of their offices as the Victoria Memorial Museum were taken over by government. Curators literally worked at desks among the public exhibits.

The assembly and study of anthropological collections at the end of this period was drastically affected by the Depression, as government resources were diverted to social and economic recovery. In the United States, archaeological excavation was undertaken by large teams of unskilled workers as part of federal job-creation programmes in places such as the Tennessee Valley. Then preparations for war again affected the levels of government funding for archaeology.

The interim period, during the 1920's, saw a great deal of collecting of both ethnographic and archaeological artifacts as the major museums competed for the 'remnants' of the material culture of a 'vanishing race'. The focus of their collecting was on the traditional cultures rather than acculturation or other cultural processes. They viewed past cultures as static, and saw the ideological as determinant. This affected collecting methods, emphasizing the acquisition of ritual material such as masks over utilitarian objects. Technology was

collected, but not documented with the same attention to detail. Masks and other such objects were collected with ownership pedigrees and descriptions of associated rituals, oral traditions and myths. Tools were documented briefly, with mention of function and provenance, but little else.

In addition to major excavation projects, American archaeologists concentrated on development of classification systems in developing regional chronologies and culture histories. Prior to World War II, catalogues of artifacts found comprised a major component of archaeological reports. Descriptive taxonomies seemed to be an end in themselves as archaeologists became more systematic in their treatment of artifacts. Prior to the developments of physical dating techniques such as carbon 14, artifact seriation was the primary method of dating. For example, in the Southwest, pottery was seen as an ideal focus of research. It combined many distinct attributes which were assumed to have varied greatly through time and across the region. As a sensitive chronological and distributional marker, southwestern pottery was described in the biological format of genus and species (genus as colour/decoration; species as geographic distribution) (Gladwin 1931, Colton and Hargrave 1937, among many others). The historical taxonomy treatment was applied to the eastern United States pottery by J. A. Ford, where he elaborated on the theory behind the use of types. This research made extensive use of museum collections, often using those with little provenance data, and was primarily supported by

museum based funding. Many monographs on the results of such research were published as museum handbooks.

Another classification system that relied heavily on museum collections with little provenance data was the Midwestern Taxonomic Method. Given the constraints of the data available to him, W. C. McKern developed a system that classified the material culture of the eastern United States in hierarchical relationships, ignoring spatial and temporal factors (McKern 1939).

At this time material culture was seen as a distribution type, artifacts or norms of material culture which suppressed variation within a defined spatial and temporal set. Artifacts were used as indicators of culture change, such as markers of migrations, for example. Studies of artifact types, and attention to details of type variation supported the theoretical and culture historical speculations of the time, dealing with topics such as migration and diffusion, ethnicity and the development of technologies. Evidence supporting speculations on complex aspects of social relations and kinship were sought, for example, in ceramic assemblage distributions (Longacre 1970). In this and many other similar studies it became clear that a simple, immediate reading of the archaeological record was more elusive. Even prior to the impact of processual concerns, archaeologists were becoming more attentive to the relative power of their explanatory frameworks.

The taxonomic device of the 'type artifact' developed out of stratigraphic and seriation methods and resulted in the construction of artifact categories such as Woodland pottery. These devices tended to combine ethnic affiliation with artifact 'style', creating a classic form of each artifact type against which other specimens were measured. This concept became embedded in museum collections management systems as they came to be recognized as standard objects, even when no standard could actually be found in the collections. Curators then, rather than focusing on the limitations of the classification system, created ever finer gradations of the system. Collection management discussions centered into which category the anomalous artifact could be squeezed. The issue of function as a problematic aspect of collection cataloguing was rarely raised. Curators assumed they could impute function for almost all artifact types.

The concept of the artifact type became a major issue as J. A. Ford and A. C. Spaulding debated the ontology and uses of the concept of 'type'. Ford (1936) used pottery types as a measure of cultural variation in time and space. He saw types as a construct, a tool used by archaeologists - if types were not 'useful' in ordering material culture in chronological sequences, they were of little utility (Ford 1938). Spaulding on the other hand felt that 'types' could be discovered in the data - they were pre-existing in the material record. He saw artifacts as clusters of attributes which were distinct in the objects recovered.

Types were not arbitrary analytical tools, but material remains of classification systems in the minds of the originating population. (Spaulding 1953).

The lengthy Ford-Spaulding debate in subsequent issues of American Antiquity centered on the use of types and the use of artifacts. Were artifacts chronological indicators, or could information on function and cultural context be deduced? Most subsequent archaeologists appear to have accepted that clustered attributes did exist in the minds of the original makers and users of the artifacts, and that these functions could be uncovered using statistical means. The typology/ artifact meaning debate was continued into the 1960's with the 'taxonomic' vs. 'analytical' debate as these concepts were applied to the study of the processes of culture change. (Gifford 1960, Sabloff and Smith 1969, Wright 1967, Dunnell 1971.)

Henry B. Collins Jr. used artifact types is a slightly different manner. His dating of archaeological sequences on Alaskan beach ridges is based on artifact classification and comparison with stratigraphic positioning. In the arctic example, however, stratigraphy has several meanings. In this case, Collins recognized a succession of occupations on beach ridges which paralleled the ocean. As the sea level fell, people following an annual round of occupation and abandonment of many sites over several years, abandoned sites on the inland ridges and moved closer to the waterfront, leaving behind a sequence of sites arranged chronologically from inland (older) to the beach (younger).

Collins then compared artifact types from these sites, and arranged them into a sequence of, for example, harpoons, which gradua.'y morphed from one form into another. This provided him with evidence for continued re-use of the general location by the same cultural group over a long period of time. From this Collins gave importance to the gradualism of cultural change that could be demonstrated in the incremental changes in types and styles (Collins 1937).

Museum activities at the time centered on the inventorying of collections. Many collections were acquired from uncontrolled excavation, or had little provenance data. These collections were ordered by cultural groups or 'culture areas'. The idea of a group of contiguous 'tribes' which shared many traits, making up a culture area was adopted wholesale by many museums. The National Museum of Canada, for example, based its entire catalogue and numbering system for both archaeological and ethnographic collections on culture areas. The world, with particular attention to Canada, was divided into broad groups, each receiving a Roman numeral. VII stands for Northwest Coast ethnographic, XI stands for Northwest Coast archaeological, for example. Within these culture areas, subset of specific tribes were assigned letters. Thus the Tlingit were VII-A, the Haida were VII-B and the Tsimshian were VII-C. Smaller subdivisions (Chilkat, Kaigani, Coast Tsimshian, Gitksan or Nisg'a) were ignored. Artifacts were numbered sequentially within these groupings.

This numbering system is still used at the Canadian Museum of Civilization, as changing it would entail re-numbering hundreds of thousands of artifacts and documents. The system has created many problems for subsequent cataloguers, who are forced to change many documentary references as well as the number on the artifact if a designation is changed, for example if an object is reassigned from Haida to Tsimshian on the basis of new research. The system tends to create boundaries where there were none, and blur alliances which have great historical depth, such as the Gitksan (Tsimshian, VII-C) and the Wetsu'et'en (VI-B). This numbering system constrained later research, carrying divisions of the collection into research as area specialists were hired to curate and research specific, defined subsets of the collection.

The concept of the artifact catalogue as an end product of museological work became prominent. The catalogue was seen as the primary tool used in accessing collections. A complete, cross-referenced catalogue detailing the collection was seen as equal in importance to the collection itself.

The Classificatory - Historical Period

Willey and Sabloff's Classificatory - Historical period (1940 - 1960) saw a concern with the context of artifacts and a view of material culture in terms of its function. Artifacts were seen as mirrors reflecting past human behaviour. During this period the development of archaeological typologies became more

important. These typologies became more complex and more sophisticated in their application as the period progressed. Finely detailed and formally defined typologies were developed to permit more carefully controlled plotting of artifact and culture sequences into site and regional chronologies.

The Classificatory - Historical period saw a shift in collecting emphasis by major museums. There was a marked decline in active ethnological collecting, and a complementary increase in collecting as a result of archaeological excavation and survey. This was, in part fueled by the belief that traditional cultures had all but disappeared, and the fragments left in the living native community after the collecting frenzy of the preceding periods were of little value. The post World War II fascination with technology and science promoted archaeological activities as scientific inquiry, prefiguring the development of the New Archaeology. Archaeologists investigated past technologies through the recovery of tools and other material culture. Artifacts acquired through archaeological means tended to be analyzed in terms of technology rather than ideational attributes.

Museums turned their attention toward the development of large interpretive galleries. In these galleries the Boasian 'artifact catalogue' approach to exhibition was replaced by displays where artifacts were arranged and explained primarily in terms of function and technology. There was an expectation that a detailed diorama could explain past cultures to the public.

The Processual or Explanatory Period

During the Processual period, Willey and Sabloff's Explanatory Period (from the 1960's into the 1980's), the archaeological record came to be viewed 'scientifically' as evidence of past behaviour which could be sampled (Watson et al. 1971:25,112) tested against hypotheses (Renfrew 1972:18, 44), observed (Schiffer 1976: 17), and measured (Binford 1982: 129). Artifacts were seen as a data set to be sampled, relying on systematic methods to come to an understanding of the processes of culture change. With the development of systems theory and an ecological approach to archaeological investigation, the role of the natural environment as a constraint or as a causal determinant became prominent. Site formation processes were recognized as important distorting factors (Schiffer 1987).

During this period processual archaeology facilitated the development of concepts of cultural resource management. Under this rubric archaeological resources were to be preserved for the public good, for the benefit of all. Government departments of cultural and archaeological resource management were set up to administer legislation requiring permits for archaeological investigation.

Given the immense sums of public funds which were spent to recover the artifacts, specimens, samples and other archaeological materials, a

consciousness of the need to preserve these collections in the public trust for future generations developed. Museums began to regard the results of archaeological excavation as 'evidence', the raw data of archaeological inquiry.

Museum collecting paralleled this pattern, viewing cultures as systems and archaeological evidence as divisible into subsystems. These subsystem collections came to be curated separately, isolating non-artifactual collections into reference or comparative study collections, such as zooarchaeological reference collections of the skeletons and other hard tissue of fauna typically recovered from archaeological sites against which recovered faunal remains are compared.

Artifacts began to be collected with unprecedented attention to provenience data, which was valued as highly as the artifact itself. Physical anthropology collections were acquired, catalogued and analyzed much more carefully and scientifically, being seen as a medical and biological resource. The curation and analysis of physical anthropology collections became more specialized, leading to its segregation from other departments of museums' holdings. Systematic and comprehensive catalogues of archaeological and ethnological collections began to be designed and implemented as information systems theory developed and newly available computer technology was introduced as a powerful organizing tool.

By the 1960's it was evident that typologies would not give the level of data abstraction needed to formulate general laws of cultural process. They were seen as little better than the previous conception of material culture as an immediate reflection of socie' and cultural factors. Processual archaeology, developed to bring a more 'scientific' footing to archaeological interpretations saw little utility in endless inventories of museum collections, seriated according to sometimes dubious principles of stylistic change. Radiocarbon and dendrchronological dating, now well developed, rendered the use of typologies and seriation studies somewhat obsolete for the purposes of developing site or regional chronologies.

This 'new archaeology' is based on a Hempelian form of positivism which gives rise to a search for ever more general law like statements. Characteristic of the new archaeology is the use of mechanistic or quasi-deterministic models of past human behaviours, such as catchment analysis, carrying capacity, systems theory etc., which use the material record as data to develop more generalized statements about patterned behaviour. Technology is seen as a cultural tool to confer adaptive advantage, a primary means of adapting to environmental change.

The search for and analysis of patterning in the archaeological record is central in processual archaeology. Patterning revealed repeated human activity, and can therefore be used to generalize human behaviour. Culture

process and culture change can be seen in these generalized behaviours. Processual archaeologists utilize cybernetic models, which use the concept of 'system' to universally explain all phenomena. Culture is seen as analogous to a biological organism which must interact with other systems, such as the environmental eco-system. These arguments in archaeology mirrored arguments in geography, history and anthropology which contrasted the search for generalizing principles and the merits of 'thick description' (Geertz 1973: 6-28).

Processual archaeologists therefore viewed material culture as a record to be interpreted through the objective tools of science. Objective observation of material evidence can lead to an understanding and explanation of cultural evolution. This was contrasted with non-objective observation in the 'emic' / 'etic' debate, where the scientific objectivity of archaeology or anthropology was contrasted with non-scientific, subjective oral traditions. Museum examples of this change of focus may be seen in the development of science centres and museums of science and technology which proliferated in the 1960s and 1970s. The trappings of science were used to increase the credibility of both archaeology and museums in a skeptical age (Trigger 1989: 398).

A strong reaction to the elitist nature of antiquarianism and the particularism inherent in cultural historical studies was evident. Descriptive taxonomies, typologies and other more sophisticated forms of types of 'thick

description' were abandoned in the search for general principles and 'law-like statements'. Material culture studies waned, and museum publications on artifacts became the province of the amateur collector. This association further belittled material culture studies in the eyes of processual archaeologists.

Museum exhibitions of the processual period focused on interrelationships between cultures and their environment, creating dioramas to explain human behaviour. The emphasis on the material culture of the elite that had been common in earlier exhibitions was put aside in favour of didactic exhibits which diagrammed cybernetic relationships. Collection management reflected this in several classification systems in vogue at the time that categorized artifacts according to technology. The most commonly used museum classification system outlines different areas of technology as subsystems into which all artifacts (theoretically) may be organized (Chenhall 1978).

The early practitioners of the new archaeology (*e.g.* Hill, Deetz and Longacre) saw past human behaviour directly reflected in artifact patterning. Kinship patterns and intercommunity affiliations based on kinship were seen to be recoverable with the use of direct ethnographic analogy. The new 'scientific' approach fostered a new understanding of site formation processes. Artifact patterning was not seen as a direct reflection of past human behaviour, but rather a complex amalgam of past behaviours and taphonomic processes.

In order to develop more universal laws of behaviour and site interpretation Lewis Binford proposed middle range research as a way of using artifactual data in a more explanatory manner. By examining the ways the archaeological record was formed, he was able to make more powerful predictive statements about artifact patterning, site distributions and the past behaviours which produced them (Binford 1983). In middle range research, Binford hoped to "get from contemporary facts to statements about the past" and to " convert the observationally static facts of the archaeological record to statements of dynamics" (Binford 1977: 6) Similarly, Thomas' mid-range theory provides 'relevance and meaning to the archaeological objects." (Thomas 1979:398) . It provides a link between empirical generalizations derived from observation of the archaeological record and higher order theories. (Raab and Goodyear 1984:257) and a general theory of site formation (Binford 1980). Despite its poorly chosen name, the concept of a bridging mechanism from empirical data to theory or at least generalization has proved useful.

The goal of middle range theory is to broadly investigate site formation processes and subsequently to apply this knowledge to the interpretation of the archaeological record, in order to develop general laws of behaviour. An example of this is Lewis Binford's analysis of European Mousterian faunal assemblages and early hominid scavenging using analogy with Nunamiut butchering practices (Binford 1978).

Middle range research and experimental archaeology use ethnoarchaeology as a method. 'Action archaeology' and 'living archaeology' (Gould, 1968, 1974, 1980) became popular as ways of understanding the archaeological record through the processes of its formation. As ethnography as practiced by anthropologists did not result in the specific, materially oriented data needed to interpret the archaeological record, ethnoarchaeology was designed to fill this need, documenting behaviour which had quantifiable impacts on material culture, such as tool production.

In museums, ethnoarchaeological 'comparative' collections were formed, as adjuncts to the main collections in many major museums. In large institutions experiencing growth in the 1960s and 1970s this created uneasy bureaucratic partnerships where archaeology and ethnology divisions share facilities and administrative staffs. Some of these bureaucratic structures have persisted into the present where they serve downsizing functions in periods of fiscal restraint. Accused of duplication of resources and personnel, they have often been downsized and renamed departments of human history or anthropology.

The material products of experimental archaeology rarely found their ways into museum collections, becoming instead the private research tools of the person who made or commissioned them. In other cases, entire museums became recreations of a 'living past' in which iron age villages, fur trade posts,

military installations or farming communities were reconstructed and peopled by a large interpretive staff (for example see Jorvik Viking Centre, Old Fort William, Fortress Louisbourg, Upper Canada Village or Colonial Williamsburg). These practical results of ethnography and ethnoarchaeology are some of the most popular human history museums. Beyond the simple recreations as a part of cultural tourism, however, questions regarding the present day political messages and implications have been raised (Leone 1981:9).

Despite the current emphasis on technology and science, material culture studies have played a much reduced role in archaeological theory in the past 30 years. Museums continued to collect material culture, but on a reduced scale. Excavations and surveys are seen to produce information, while the production of artifact assemblages for museum curation is a by-product of the main work. Downsizing of collecting activities can be traced to financial constraint for the later period as archaeology becomes ever more expensive. Many museums, particularly government museums, have felt political pressure to be seen as more responsive and accountable to the public, and have therefore directed their resources to public programming and interpretive galleries rather than curation.

Many museum exhibits developed in the 1960s through the 1970s abandoned the chronological narrative of historical interpretation, choosing to emphasize the role of the environment in shaping human experience. Mundane

artifacts were used to construct past lifeways of 'ordinary people' rather than concentrating on spectacular exhibits of elites. This was also the period of the local history movement, when the public had a sudden interest in heritage. Stimulated by federal heritage initiatives and centennial and bicentennial commemorations, local museums sprang up at a phenomenal rate. This provides the infrastructure for a distributed network of archaeological repositories in local museums. Here collections are available to local historians and the interested local public including First Nations, but may not be easily available to professional archaeologists due to logistical factors. In a local setting archaeological collections are also often exposed to the vagaries of inconsistent non-professional curation.

In contrast, 'blockbuster' traveling exhibits which began at this time took advantage of both improved infrastructure to promote travel and shipping arrangements, and the public's disenchantment with the more pedestrian exhibits they were accustomed to at their local museum. Few small museums had the budget to mount major technically impressive exhibits effectively. The gap between the local museum and the major museum widened as the public flocked to the first North American Tutankhamun and Da Vinci traveling exhibits. Interest in block buster archaeology exhibitions continues with the 1995-1998 Genghiz Khan North American tour.

A criticism of processual archaeology is that processual archaeologists view cultures as systems rather than people or individuals as their unit of study. They tend to de-emphasize the importance of groups within the culture, as the culture is generally seen as homogenous. Under these constraints, a processual archaeologist has difficulty seeing social groupings within a culture. This is not due to a lack of theoretical tools, but a generally implicit assumption that all culture members have equal access to both material and human resources. By contrast, post-processual approaches view cultures as heterogeneous, made up of competing interest groups founded in class, gender, ethnic or other differences.

A second criticism of processual archaeology levied by post-processual archaeologists is over the perception of power. The processual reconstruction of the past became an interpretation from one point of view which stood for the many points of view found in a living culture. As material culture concentrates in the hands of elites, processual archaeology became a view of past societies from the top down. This can be contrasted with post-processual archaeology which, by seeing artifacts as meaningfully constituted, provides tools for understanding human agency in a number of situated interest groups. Postprocessual archaeology, in dealing with material culture as an active symbol system, in seeing cultures as heterogeneous and in admitting the possibility of proactive change as rather than solely reactive gets away from the

more limited interpretation of material culture common in processual archaeology.

The Post-Processual or Post-Modern

With postprocessual approaches, material culture has taken on a new importance, being seen in a rather different way. Artifacts are seen as active symbols, structuring and re-structuring society and individual expression. They are a part of human action and agency. Artifacts are understood to have ambiguous meanings, the interpretation of each being dependent on context. Objects may have different meanings to different interest groups in the society. Attention is directed to the individual actor, within his or her context. Material culture is analyzed with a view to recovering information about human relationships, often in terms of the politics of the past. Material culture is understood reflexively, and treated as text. Scientific objectivity is denied as illusion. The contemporary practice of archaeology and its expression in museums is understood in terms of present day politics and social relations.

Post processual archaeology is not a single entity, defined by a single or limited number of controlling statements. While the previous modes of archaeological thought had a cohesion in the valuing of objectivity and the scientific method and attention to culture processes, post-processual archaeology is a loose association of postmodernism, gender studies, feminist,

and critical theory, among others. While there is no controlling model, these approaches have many similarities.

The post-processual attention to human agency as active participants in culture process leads to an emphasis on social, ideological and symbolic aspects of material culture rather than a focus on the functional and adaptational roles perceived by processual archaeologists.

Artifacts as symbols in action

In post-processual archaeology and museology, artifacts are seen as consciously constructed symbols. These "symbols in action" create and reproduce meaning for the people who use them to negotiate in their own or their group's interests, making statements about power and human interaction. An object may be a functional item, for example an axe whose attributes of material strength and its use in battle were symbolically appropriated by an actor who wished to transfer statements about violence and physical power into statements about domination and social power (Hodder 1982). The functional attributes are considered and evaluated in the active choice of the axe as a symbol. They enhance the symbolic weight of the object in its new context. By actively selecting and using the symbolism of the strength and power of the axe, meaning is created which supports the political aims of the group or person appropriating the object as symbol. In post-processual archaeology and museology artifacts are viewed as objects actively selected and used to

construct and maintain social and political power relations. The obvious functional aspects of artifacts are recognized, but on another level, artifacts are seen as a group of potential symbols. Artifacts are chosen, re-defined and re-shaped ideologically to serve new purposes in constructing personal and group statements. They are consciously chosen, selected for specific contexts. To post-processual archaeologists, the understanding of past societies is in the articulation of social groups, which may be understood through the study of past individuals' choice of objects to be used as symbols. The artifacts found in the archaeological record therefore have a meaning beyond the functional. (Hodder 1982)

This contrasts markedly with previous processual views which view material culture as the means of adapting to environmental change. There people are passive agents, reacting to environmental change through material culture. By seeing artifacts as 'symbols in action' archaeologists can begin to understand past human behaviour in a more powerful way. People are seen as consciously manipulating objects as a strategy to negotiate self interests and to bring about culture change. It assumes that past people were active structuring agents, developing their own social relationships in ways either in a conscious or implicit manner. In contemporary societies material culture has many symbolic meanings and contexts. It is 'read ' in a variety of ways. For example, a book may be used in a variety of contexts and is symbolically multi-referential. It can be a form of communication, a symbol of religious power and wealth, a

subversive element, or destroyed as a means of demonstrating control over dissidence. Similarly the material culture of past peoples is analyzed in terms of the ways it is used to structure and symbolize social realities. In a similar way, artifacts in museums have served a variety of functions, and have been interpreted in a variety of symbolic statements by different groups.

An excellent example of this redefinition of material culture is the potlatch collection. These masks, coppers, rattles, whistles and other objects were confiscated from the Kwagu' people of Alert Bay in 1922, after a potlatch hosted by Mr. Daniel Cranmer in contravention of the anti-potlatch provisions of the federal Indian Act (1885)(Sewid-Smith 1979). Within their original context, these objects were of profound traditional ritual significance. During the time of the enforcement of the anti-potlatch law the use of these objects was symbolic of continuing cultural values. The trial at which Daniel Cranmer and many high ranking people were convicted contained many irregularities (Cole and Chaikin 1990). After the objects were confiscated, the collection became a symbol of resistance to colonial administration. In the 1970s, when efforts to secure the return of the collection gained momentum, the Canadian museum community saw the repatriation as a dangerous precedent which could trigger an onslaught of similar demands. Since the return of the collection to Alert Bay and Cape Mudge, the collection is used in cultural renewal (Cranmer Webster, 1995). In this example, the collection has meant very different things to different groups, each using the collection in self-interested negotiation.

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Processual archaeologists view social and ideological systems as epiphenomenal. Change is initiated through material phenomena such as technology and subsistence. Material culture is not intentionally formed, encoded with meaning or symbolism, it is primarily functional. In processual archaeology, material culture is residue, remains which may act as clues to more basic underlying truths. Postprocessual models of material culture, on the other hand view material culture as actively structured by human thought and behaviour. This view has been derived from Marxism, where material culture is seen as a product and outcome of social relations, and from developments in critical and symbolic anthropology, where material culture is seen as a constitutative agent affecting social relations in a reflexive manner (Scholte 1988). Material goods are consciously and subconsciously patterned, and used as symbols, as laden with meaning for actors in past societies as they are in present societies. These conscious choices may be teased out of the archaeological record. The critical investigator views material culture not as a passive object, but as an active agent, a 'material-semiotic actor' (Harraway 1988:591-6) This semiotic approach draws the ideological referents of the object into the discussion, expanding our understanding of past cultures.

The individual, material culture and social relations

Processual reconstructions of past cultures do not consider the individual or individual social groups, reducing cultural processes to mechanistic systems

which cannot be controlled or diverted from their trajectory by human beings acting within the cultural system. This does not fit well with a historical understanding of the past, where individual actors or groups of individuals have influence.

In an effort to read active agency back into our understanding of the past, post-processual archaeologists have borrowed concepts from sociology, philosophy, semiotics and anthropology. This re-reading of the context of the past has affected the way archaeologists, and with them, museum curators, use and view the archaeological record and artifacts.

This emphasis on the individual leads to an understanding of social relations as intentionally constructed relationships. People are seen in their social context, actively trying to better their position vis-à-vis others. Individuals have personal goals and are active in their pursuit of these goals. This has lead to the view of individuals as competing agents, each promoting their own interests. These interests are often at variance one with another. Relations are seen as dynamic, in constant negotiation and manipulation. The resulting view of culture is one where negotiation and constructedness are part of human agency. Thus many parts of life, especially material culture come to be seen as tools employed to promote the self in cultural negotiation.

This emphasis on the individual does not assume that individuals may be recognized archaeologically. In the absence of written records, this is extremely

difficult. The emphasis on the individual recognizes that individual people made and used the objects which now form the archaeological record. These people or groups of people were situated in a social context that to some extent determined their social relationships, their place in society and the way they worked with material culture.

This emphasis on the individual also leads to the inclusion of the investigator in the analysis. A major contribution of critical theory to post-processual archaeology is the treatment of the bias and view of the archaeologist. Present political and social factors impinge upon our interpretations of the past. The context in which we do archaeology has a great effect on the theories we promote, and the 'facts' we discover about the past. Each archaeologist is a positioned, situated individual, just as the participants in the ancient cultures we study were positioned individuals. An awareness of our social, political and theoretical context leads to a self-aware archaeology, one that takes the bias of our situated realities into consideration.

The recognition of the active individual has directed attention to the analysis of past social relations in terms of power. Power is seen as the capacity of an individual to act (Giddens 1979). Post processual archaeologists have looked to Giddens' (1984) analysis of social relations in terms of principles of 'structuration'. Giddens differentiates between different resources of power - such as those derived from material resources, and those derived from social

resources. The material resources are not powerful in themselves, but they channel action. Social resources are the ability to manipulate others through ritual, kinship affiliation, labour, *etc.* These resources are used to legitimize, reinforce and extend the power of the interest group. By using these differing means, the power relations are established and 'marketed' to others as a natural relationship. Interest groups must convince other individuals and groups to 'buy into' the social myths. For example, those in dominant positions market the message of their superiority, making it appear to be the natural order. Those in subordinate positions also have access to some resources, they use these to negotiate their own position. The social and material context is therefore a system of legitimation. Tangible material objects and intangibles such as social resources (for example kin relations) become powerful tools in the structuring and legitimation of social relations and ongoing symbols which continually reinforce the power structure. Social resources are seen as equally powerful with material resources in the construction and reproduction of power.

Even the most dominating of elites in a totalitarian context cannot control all aspects of social life. There are always those who are outside the circle of the powerful. These disenfranchised sectors of the populace must be convinced that the social structure which reduces or eliminates their opportunities for wealth and power is acceptable. The elite market this social structure in variety of guises, as a natural state, as a divine right or sanctified by weight of historical tradition, to cite a few common examples. These disenfranchised people are

permitted a forum in which they may assert their own view and challenge the domination of the elite. Without such an arena of controlled dissent social tensions lead to dramatic shifts in power.

The dialectic of control becomes a negotiation between groups of greater and lesser power. Those in dominant positions must share some aspects of power with subordinate groups, for no elite can control all aspects of life in a totalitarian fashion. This creates the opportunity for the disenfranchised to assert some small measure of control. Typically, this voice of the disenfranchised, and the dialectic of domination which is its context, can be seen in material culture. Permitted dissent is played out in a number of means, including material culture. By confronting domination in material means, more socially disruptive forms of dissent are abrogated.

Hodder (1982) uses this in his analysis of gender relations. In his view men make overt symbols of their power, while women challenge this power on its own terms, but in non-confrontational ways. In his view women, and by extension, other disempowered groups, have to be covert in their dissent. Symbolic dissent is permitted in circumscribed arenas. Material culture is thus a non-confrontational presentation of ideology (David, et. al. 1988). In another view, disempowered groups accept the power imbalance, and recognize the inherent inequity, but use material culture to construct and present themselves in a positive manner by drawing attention to their accomplishments and

contributions. Those with less power do not confront the more powerful, but present another perspective which is usually not recognized by the powerful (Moore 1982, 1986, Lyons 1992). Thus, they may not present a separate ideology, but may present their contributions within the dominant ideology

Archaeological practice as reflexive

The reflexive nature of archaeology is seen explicitly in its treatment of artifacts. The meaning of the past does not just arise out of the objects inherited from the past, but includes the context of their analysis in the present.

Archaeology is not neutral. Archaeology itself can be seen as technology, a technique which forms itself and its investigations systematically, thereby pre-determining its questions and the objects it questions. The justification of archaeology as science is supported by the preoccupation with technology (Trigger 1989). Processual archaeology is firmly anchored in the rational methodology of defining objective knowledge about the past. This methodology, however pre-supposes the validity of an objective framework, the unified and abstract nature of societies and cultures as well as nature itself. These are seen as objects to be quantified and manipulated. This commodified understanding of culture and the past is at the heart of Shanks and Tilley's critique of processual archaeology (1987b).

Post-processual studies centre around the concepts of access to power, that behaviour is meaningfully constituted, and that archaeology is as much a tool of the present as it is a way of understanding the past. Archaeology is seen as a reflexive re-telling of the past in terms that have utility for the present. This has had and will have a great impact on the presentation of archaeological interpretations of material culture in museums.

In the past, museums presented themselves as impartial, objective, authoritative voices. However, numerous examples have caused museum professionals to rethink these assumptions and presentations. Museums are most often financed through public funding. They are thus vulnerable to bureaucratic and political interference from their civil service and political masters. The threat of funding cuts is real.

Historic examples of partisanship in museum exhibits abound. The most obvious examples can be found in Nazi Germany and Stalin's Soviet Union, but many examples are closer to home. What museum in the United States would mount an exhibit on the economic benefit of black slavery to the expanding colonies? Would a museum exhibit American Indian or First Nations ritual material as evidence of the depravity of aboriginal cultures, their satanic ceremonies or witchcraft? Yet exhibits of this type were mounted in the eastern United States in earlier times. This goes beyond issues of political correctness. Examples such as the Royal Ontario Museum's 1986 'Into the Heart of Africa'

and the Smithsonian's 1994 proposed 'Enola Gay' exhibition demonstrate the political boundaries of museological interpretation. Museums may challenge authority in small ways, but are quickly shut down if the message gets out of hand (Ames 1992).

Material culture as text

In the shift through processual theory to post-processual understandings of the past, there has been an increasing tendency to value ideology and meaning while simultaneously changing the focus of the interpretation of technology and the material. Processual critiques of post-processual work have understood this as the locus of explanatory importance shifting from material culture and the archaeological record to non-material aspects of the interpretation of the past. To a processual archaeologist, these artifacts have lost their explanatory power (Bettinger 1991). However, these critiques have not understood the basis of a post-processual understanding of material culture.

In post-processual archaeology, material culture is seen as more than that which can be described and catalogued. There is always a 'surplus of meaning' beyond definition and description (Shanks and Tilley 1987a, 1987b:66), The semiotic and symbolic aspects of the object must be taken into account. At the heart of postmodern analysis is this treatment of the world as text. In archaeological applications, this becomes the treatment of material culture as a consciously constructed, ideologically manipulated product of past

individuals and cultures. Thus the archaeological record is seen as socially, historically and symbolically constituted.

In earlier periods material culture was seen as the prehistorian's equivalent of the written documents which formed the basis of the archaeology of classical civilizations. This understanding of 'texts' is quite different from the post-processual understanding of text, and has led to misunderstandings. In the metaphor of the world as text, or the archaeological record as text, the past is reified as a separate entity, having an autonomy from both its creator and its original context. Therefore, a plurality of interpretations are possible. This concept was applied in cultural anthropology by Geertz in the 1970's and has been developed in archaeology by Hodder (1986, 1989a, 1989b) and Shanks and Tilley (1987a, 1987b, Tilley, 1989). The basic tenet of this argument is the treatment of material culture as communication, a consciously framed discourse:

> "material culture is a framing and communicative medium involving social
> practice. It can be used for transforming, storing or preserving social
> information. It also forms a symbolic medium for social practice, acting
> dialectically in relation to that practice. It can be regarded as a kind
> of text, a silent form of writing and discourse; quite literally, a channel of
> reified and objectified expression." (Tilley 1989:189)

This provides the opportunity for the archaeological record to inform the present, to be objectified. Hodder reflects on the subjectivity of material culture as text:

"But written texts and especially material objects often become

divorced from their authors. As the texts are moved around

within society or are read by different people they can be

given meanings in relation to novel and unexpected similarities

and differences. The meaning of an object does not lie within that

object but in its reading, that is, in the link that is made between

that object and other objects, words and concepts. As a result the

meaning of an object is never static and its reading is never

finished. It is always open to new interpretations." (Hodder 1989a:68)

These developments can be seen in structural analyses of objects in museum collections (Levi-Strauss 1988, McGhee 1977) They have had little effect on the collections management aspect of museology, but more effect on exhibition, as, for example, ritual materials collected at the turn of the century are exhibited against readings of myth texts and oral histories on shamanic encounters. The cave exhibit in the First Nations Galleries of the Royal British Columbia Museum is a good example of this. There, masks are lit sequentially, with a voice text 'explaining' them in terms of oral tradition.

Presently, archaeology is stretching to include the situated context of the archaeologist in the present, reflexively examining the past. Rather than objectively examining the evidences of past behaviours, the archaeologist is conscious of the social, political and theoretical context which frames his or her understanding of social relations in the past and present and the production of the archaeological record. As the past informs and creates the present, so also the present reflexively creates and forms our understanding of the past as seen in the archaeological record. Critical theory is causing an examination of bias inherent in interpretations, in both archaeological theory, synthesis and exhibition. Few exhibits have yet been mounted that openly refer to analytic bias, but examples in museological literature can be found (Bintliff 1988, Morris 1988) etc.. An examination of the racism and cultural bias of early colonial artifact collecting in Africa was the focus of "Into the Heart of Africa" (Cannizzo 1989). This message was misunderstood by activists, who attributed the imperialists attitudes of the early collectors to the modern curator (Ames 1992: 157).

Material culture and objectivity

One of the hallmarks of processual archaeology is its emphasis on objectivity. Material culture, as real, tangible evidence of past cultures was valued for its information content, but the information obtained from these objects tended to be lost in the 'scientific' smoke and mirrors that accompanied many processual papers. A major tenet of processualism and science, the

paramount nature of objectivity, has been largely discredited both in the philosophy of science and in application in specific cases (Brown, 1994). Postprocessual archaeologists, in concert with poststructuralists and postmodernists, recognize the subjective nature of science and of archaeological inquiry. This has lead to a very different treatment of material culture in the developing postmodern archaeologies.

In recent work in the philosophy of science, a reliance on objectivity as a presumed methodology has been shown to be misleading. For example, numerous cases of the failure of objectivity have been cited by feminists listing many of examples where androcentric bias has distorted interpretation. (for example Bleier 1984, Fausto-Sterling 1985, Fedigan 1982, Keller 1984).

Most processual archaeologists view material culture as a static record. Although the material record itself changed through processes such as post-depositional disturbance, archaeologists sought an understanding of the initial context of use and abandonment of the site. The archaeological record was seen as something which, when analyzed scientifically, could reveal 'real facts' about 'real events". Postprocessual archaeologists, on the other hand challenge the notion of the objectivity of the scientific method, seeing science as a cultural product. They see the material record itself changing substantively when viewed from varying points of reference. Historical events, and by extension, pre-historic events and trends "cannot be observed like mountains or cows... (it) is a

matter of asking questions about evidence, initial questions,

which frame the inquiry and subsequent questions which, as they

proceed from each other, constitute the inquiry, and their

answers the narrative. Thus the direction and the context of

the narrative depends on the kind of framing question that

is asked" (Lewthwaite 1988).

Processual archaeologists rather view material culture as a passive reflection of culture that may be analyzed to reveal imbedded social relations. Postprocessual archaeologists view the material record as a reflexive relationship between the original context of manufacture and use and the interpretive context of analysis. Material culture is seen as an active force constituting social relations in the past, and one which reflexively acts upon the present.

A radically different reading of material culture and the archaeological record follows - material culture is seen as reflexive and multi-vocal, and the agendas of present interpretations must be critically examined.

Beyond the subjectivity of the artifacts and the material record, postprocessual archaeologists deal with the subjectivity of the archaeologist within a modern socio-political framework. The processual equation of objects with facts, as data to be quantified, is seen to have led archaeologists into

formal methods which provide stricture rather than structure. By recognizing that meaning cannot be found in facts is to understand that meaning can be found in the relationship between the facts and the researcher. "In short, naive realism errs in supposing that the past is directly accessible to us" (Golob 1980:60).

Just as description is not explanation, explanation is not understanding. In culture-historical archaeology an object was named and catalogued, in processual archaeology an object was considered as an indicator of processes within a culture system, in postprocessual archaeology an object is seen as a symbol in action. Each explanation is useful within its frame of reference, and reflects that theoretical context.

If objectivity is impossible, how does one deal with the consequent relativity? If all knowledge is historically contingent, all knowledge becomes partial, there are no general laws, no universals. Therefore, knowledge becomes inevitably bound to the social and historical context which produced it. Within the context of this relativistic epistemology material culture comes to be seen as the site of a negotiation between social actors. Each actor has a point of view, an agenda which is worked out in material symbols. The archaeologist must look at these various symbol systems and assess the meaning behind them, searching for a coherence with other symbol systems known in the culture under study. As a many different interpretations are compiled, they are

compared against the material record and what is already known about the society under study.

The deconstruction of material culture as text is a difficult and troubling exercise. When all the signposts of objective reality become illusory, retaining one's own footing is a challenge. Without the perspective of the long range utility of the exercise, the process engulfs the product. The process of deconstruction becomes overwhelming and one is left with a pile of disconnected bits, unable to reconstruct a coherent logical universe. However, the skepticism propagated by postmodern thought is useful. It presents a foil, a contrast against which one may judge interpretations of the material record. This tension between interpretations and perceptions of reality is mirrored in the researcher. The researcher must create room logically, allowing a contested reality to be internalized. The prospect that there are no answers, that there can be no answers is both attractive and unsettling. The cumulative weight of evidence is often seen to be rationally decisive (Bernstein 1983:74), but, within the post-modern paradigm, the comfort which objectivity promises must be rejected.

How can contested reality be seen in the archaeological record? In post-processual archaeology, material culture is not seen as reflecting conditions or processes that actually happened in the past. Rather, material culture is viewed as the product of human beings who have consciously manipulated the

symbolisms made by material culture. The purpose of this conscious manipulation is the appropriation of power and wealth. In post-processual archaeology, statements about material culture are critically evaluated - to whom are these details important, in what social context did they originally occur? The truth sought in archaeological interpretation is seen as a practical matter, a path out of deconstruction, rather than an absolute reality. The interpretation offered by the post-processual archaeologist is not considered to be a definitive statement which describes the totality of the past events represented in the portion of the archaeological record under study. Rather it is an interpretation of the material results of the actions of one or more groups of people within a past culture, viewed from the perspective of and informed by the perspective of the archaeologist.

Artifacts and objects: museums and politics

Given the emphasis on self reflection and the place of archaeology as a practice in the present, it follows that a post-processual treatment of archaeological interpretation is in order. Museum exhibitions form one method of archaeological interpretation, possibly the least sophisticated. These museum exhibits are tied to the material object. Exhibitions with few 'real objects' are less satisfying to the public than those with more, although a point of overload can be reached.

The role of the public museum is to create a story about the past for the general public. But, what story of the myriad available is to be presented? In response to postmodernist thought, some museums have attempted to include a multi-vocality in their public exhibitions. "History" is not a narrative form pronounced by the omniscient authoritative voice, but presented as a conflict of opposing points of view. This has been effectively done at Head Smashed In, where two stories - that of the scientific analyst and that of the Peigan/Blackfoot are intertwined and presented simultaneously. For example, a circle of stones serve as projection screens, showing alternating texts of the creation myths of the Blackfoot and western science.

Behind the story or stories presented are the maxims - museums convey the message that the past is important, the past should be preserved because it can teach us about who we are by examining how we got to where we are. A post-processual reflexive stance would deconstruct this, presenting this as one value or maxim among many.   The message could as easily be that objects are symbols of power. Whichever the maxim stated, the reflexive exhibit offers it as an alternative, part of a contested negotiation about the past. Thus, for example at Head Smashed In, the slaughter of the buffalo is seen from more than one situated context, the perspective of the Peigan and Blackfoot, the government of Canada, the Euro-Canadian trader and the Metis.   Each perspective is displayed in terms of its own context.

The radically skeptical stance which challenges the 'facts' in terms of epistemology is rarely exhibited, and in my opinion, has no place in a public museum. We can agree on certain facts - there used to be buffalo, buffalo were important in aboriginal culture, wide spread slaughter of the buffalo during the post-contact period drastically reduced their numbers. Once the facts are presented, there are a variety of differing stories which may emerge - the place of the buffalo in the changing grasslands ecological system, buffalo hides as a commodity in the continental market, government planned and promoted slaughter as a method of reducing nomadism among the Blackfoot or the buffalo as a symbol of power. The 'spin' is determined by the political agenda of the museum in response to its situation in the present. The story selected depends to a degree on perceived potential audience support, but, in large governmentally funded museums, is primarily determined by a political agenda.

In addition to being part of a negotiation of social relations in the past, post processual archaeologists understand that archaeological artifacts are used in political manipulations which serve the purposes of today. As discussed above, artifact collections may symbolize past colonization and exploitation of aboriginal groups by the dominant culture. They may be seen as symbolic currency - by re-claiming the objects through repatriation, aboriginal peoples re-claim political power and self-respect. The museums created to house repatriated collections take on these symbolisms. The objects may be used in

ceremonies which celebrate the past and cleanse the present of the effects of exploitation. They are tangible symbols from the past, used to affirm the future. They symbolically represent all that has been taken from the people - their language, their land, their culture, their dignity. This is being reclaimed and reappropriated. Artifacts from the past, from archaeological sites, from museum and private collections are being re-interpreted by First Nations. The political agendas of the present are profoundly affecting the artifact collections, both in the circumstances of their curation, where they are housed and how they are treated and in the manner in which they are interpreted. They have become symbols in action in the hands of modern people seeking political action according to a specific agenda.

This use of museum collections may be clearly seen in the example of the potlatch collection. Political action in the specific circumstance of museum collection repatriation was the purpose behind the formation of the U'mista society The U'mista society was created to negotiate the return of the potlatch collection from the Canadian Museum of Civilization (then the National Museum of Man) to the Kwagu' of Alert Bay and Cape Mudge. U'Mista is a Kwak'wala word meaning a person who was taken captive or enslaved by another nation. In negotiating the return of the potlatch material, the Kwagu' were negotiating the return of more than a group of artifacts. The objects had taken on a completely different meaning in the context of First Nations - federal relations concerning the Indian Act, land claims and self-government. Behind the

maxims are meta-statements about how we view the world and structure meaning. These are rarely explicit in museum curation and exhibitions.

Post-processual thought and museum exhibitions

The museum selects a story to tell, but also selects a method or vehicle through which to tell it. Shanks and Tilley attempt a deconstruction of several British museum exhibits, concentrating on the message behind the exhibition vehicle chosen. They state that through commodification, the artifact is 'in effect, removed from history' (1987b: 68). Why does commodification remove the artifact from history? Cannot history be seen as a series of commodifications and relations? Is this not the basis of a very powerful view of history? Shanks and Tilley deconstruct the 'artifact as objective data', looking for the individual and social context which produced the object. The chronological presentation of a regional history is deconstructed into the commodification of time itself, as seen from a capitalist perspective.

In another museum the past is packaged as pornography. Shanks and Tilley contend that in some museums objects are presented for the amusement of the viewers. Shanks and Tilley describe the detachment of the object from the viewer as pornography, a violation of the passive object in the process of its consumption by an all powerful consumer. Whatever one may think of Shanks and Tilley's analysis of material culture, this analysis of museum exhibit as erotic or pornographic text is strangely out of context in their work. One of the

premises of their point of view is the political construction of interpretation and museum exhibits and the re-negotiation of the past by the present. In this interpretation of museum exhibition as pornography, they abandon their point of view. They perpetuate the dominant power relations of present society and project them onto the exhibitions they view. In contrast to other post-processual writing, this is the view from the top. It does not permit dissent from another point of view, a protest from a person situated in another context of time and gender. As the exhibits are passive, violated by the viewer, the voice of the museum authority is dominant, repressing other points of view. The metaphor embodied in the exhibition is seen from a position of power. Perhaps Shanks and Tilley have not been able to transcend their situated context in the process of this interpretation. They instead reinforce their own position of social privilege.

Shanks and Tilley contend that the past is not preserved in museums, but rather the museums preserve and promote present exploitation of the object, preserving power relations of the present and projecting them into the past (1987b:68).

Museum collections, built up over generations of collecting and curating activity, have resulted in an intellectual as well as material legacy. The collections currently housed in museums reflect the collecting and curating biases of the past, and may be weighted toward the representation of elite or

powerful groups. The post-processual arguments provide a platform for the interpretation of the material culture of the past in new, multi-vocal ways. Curators in many museums are exploring ways of redressing this historical imbalance, providing a forum for First Nations and other indigenous peoples from around the world to interpret the material culture of their ancestors. This is seen as a more authentic voice by many visitors, and provides a stimulating change from the didactic exhibitions of the past.

The postprocessual approach has contributed an awareness of the political dimensions of the museum exhibit. Much more politically conscious exhibits are being mounted, exploring aspects of voice, empowerment and appropriation. The public see the museum as a spokespiece for a sector of society, not the whole. The public are demanding a say in exhibitions and programming, and demanding that the needs of special interest groups are met. Museum exhibits have become a forum for confrontation over issues of racism (Into the Heart of Africa), native rights (the Spirit Sings), and pornography (Mapplethorpe), animal rights (Trapline/Lifeline) and others. Archaeological exhibits explore the contrast between the scientific understanding of the past gained through archaeology with the traditional knowledge spoken from a First Nations point of view (Head Smashed In Buffalo Jump).

The museum is no longer an authoritative voice, but an arena where voices are heard. The curator is now one of many on an exhibition design team,

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with more and more of the substantive content of the exhibition being contracted to outside experts. As major museums reorganize to cope with fiscal collapse, curators are being laid off and replaced by short term contractors on an exhibition by exhibition basis. The locus of knowledge is no longer seen in science or the authority of the museum curator, but in those who are actively constructing messages and social realities.

Both archaeological theory and museums may be seen as a part of the broader intellectual climate of their day, each reflecting broader societal norms and expectations. There are large areas of congruence between them, as they engage in a dialogue with the material culture that is the foundation of both enterprises.

The future of curation and exhibition is tied to issues of public funding and support. Museums are currently experiencing extreme financial restraint with resultant downsizing of staff and resources, causing wholesale reorganization and realignment of priorities. Pressures from interest groups to reclaim heritage has found support in the United States with the passage of the Native American Graves Protection Act. The quality of authenticity is appropriated from museums by interest groups assuming the voice of authority. Scientific rigour is no longer seen as justification of authoritative conduct. Many would argue that the voice of scientific authority is the voice of a situated interest group, one recognized by white, capitalist, western governments.

This will lead, within a generation, to North American museums of archaeology and ethnology being taken over, in terms of both direction and staff, by First Nations. Non-native museums will concentrate on natural history and other 'safer' topics about which contested negotiation is a scientific debate rather than a rivalry of interest groups with social power and political agendas in the present.

Behind the exhibitions, behind the public face of the museum, archaeological collections are now managed and curated with post-processual concepts firmly in mind. Collections are examined and catalogued with attention to gender, social class and other constructions. Utilizing the powerful cross-indexing capabilities of relational databases and vastly increased data storage, archaeological and other museum collections may be indexed according to a wide variety of criteria. Imaging and dissemination of these images and data through the World Wide Web is further democratizing access to information on reposited archaeological collections.

Over the history of the discipline there have been four basic ways in which archaeologists have viewed objects:

1.   They can be artifacts, the raw material from which goods are made.

2.   Patterning of objects and their associations could reveal patterns of past human behaviour, leading to generalized principles of cultural activities.

3.   Artifacts can be a mode of communication and a structuring principle through which interest groups and individuals order themselves and each other.

4.   Artifacts can be seen as diachronically/historically embodying the past experience of the group, carrying ideological values or moral judgments into the present (Pearce, 1986a , 1986b).   In extreme views, objects are a narrative and the story is always changing.

Curators structure the archaeological past in three distinct ways:

1   Curators preserve collections which were assembled in the past, collections which embody the narratives of their day.   Curators modify these collections through the present day processes of cataloguing, classification, interpretation and de-accessioning.

2.   The curatorial process values some objects above others, directing differing levels of conservation resources, research, and publication to different objects and classes of objects.

3.   The exhibition and public interpretation of some objects, but not others, and the 'spin' of the storyline into which the objects are placed creates a structured interpretation of the past.

In this chapter, I have examined each of these ways of understanding chronologically, dealing with frameworks established with the beginnings of archaeological inquiry briefly, then dealing with the culture historical period, the processual period, and finally the postprocessual or postmodern challenge. I

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have shown that archaeologists have viewed the tangible material record from a number of widely differing perspectives.

These theoretical perspectives have been shown to have had influence on the practice of archaeology in museums and the curation and interpretation of archaeological collections. While a few of these views have been discounted over time, or are no longer widely accepted, most of these differing views can be found actively influencing our present treatment of archaeological collections.

Once a site has been destroyed, either through excavation, development or erosion, the only record which might remain is in the archaeological repository. As was discussed in chapter one, archaeology is a scientific endeavour only in so far as results can be shown to be replicable. However, the complete excavation and destruction of a site precludes any repetition of the excavation. In the face of this lack of replicability, the ongoing preservation and curation of the collection and its documentation therefore becomes a basic responsibility to science and to the discipline of archaeology. If collections are lost, if the internal logic of the collection is disorganized, or collections or documentation are allowed to deteriorate, this responsibility is not met. Worse, sloppy curation may create misinformation. For example, there have been sites which were reposited with the collections sorted by unit and level. In order to conserve space, collections managers responsible for the curation of these collections have combined all these materials into one box, mixing the materials. This action may not only obscure relationships and context, but may indicate relationships which were not originally present. Future re-examination of these collections may be compromised by actions taken by either the repositing archaeologists or the repository staff.

As more site destruction occurs, the percentage of the archaeological record which is held in repositories rises. However, many archaeological

repositories are over-crowded, under-funded and are in the process of re-defining their mandate away from the acquisition, care and interpretation of collections to the packaging of cultural and natural information. There is a shift from a mandate which privileges provision of services to one which permits cost recovery and a balanced set of books. In a time of reduced public funding, museums and repositories are forced to focus their activities on the creation of a revenue stream, on the development of marketing programmes which enhance public use, and the streamlining of activities which do not contribute to revenue generation. Within this new framework, labour intensive activities which do not have a good cost return, such as most curation practices, are vulnerable. Within the museum and archaeological repository community there is widespread recognition of the need for professional standards of care, but a despair that adequate funding to support these standards are a thing of the past. Reposited collections are endangered.

The term curation derives from the Latin word curare, 'to take care of'. By extension, then, when we use the term curation when speaking of museum collections we mean 'to take care of objects' and those who care for them as 'curators'. A more recent definition is presented by Murdoch who distinguishes curation as embodying three main principles: 'documentation and care and access' (1992:18-19).

Archaeological curation is carried out within and is affected by social and political context. Archaeological curation of an artifact begins with its discovery, and continues until it is deemed no longer significant and is disposed of or deteriorates completely. Curation practices seek to slow the natural processes of decay, maintaining both the artifacts and other materials and their accompanying documentation in as safe and organized a manner as possible. The primary purpose of archaeological curation is the preservation of the archive in order to permit further research. The legal and fiscal environments in which this is done has a bearing on success. This chapter will briefly examine the legal and fiscal environment in which archaeological curation is currently being practiced in Canada.

Archaeological curation involves many processes and procedures which are designed to prolong the life of the materials reposited, and to preserve their research value. The first of these two goals involves conservation measures which are aimed at the physical preservation of the objects in the collection. The second goal involves the preservation of the intellectual property associated with the collections which give them context. The preservation of the logical structures of the documentation are necessary in order to render them useful in subsequent research. A researcher who re-examines a curated collection should be able to examine both the physical artifacts, samples and other materials, as well as the field notes, maps and other documentation which preserve the context and interrelationships of objects.

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Several factors influence the physical survival of artifacts and other materials. The most obvious of these factors is the materials from which the artifact was made. Archaeological artifacts range from durable stone to very fragile organic artifacts. Although the material from which the artifact has been made is important, original use and storage, means of disposal, post depositional taphonomic processes, excavation techniques, laboratory storage conditions and a host of other factors will also affect many materials. Post repositional curation and conservation treatments may also serve to preserve or damage the physical integrity of the artifacts and samples.

Preservation of the site archive and access

Archaeological curation must balance two requirements, preservation and access. From a researcher's point of view, the most important criterion for good curation is access. Researchers must be able to locate a collection and be able to examine the entire collection. Repositories must maintain excellent collection inventories and location records. One should be able to locate a collection quickly, and make arrangements to examine it within a short period of time. Access includes provision for the archaeological reexamination of the collection by scholars and students, as well as publication, exhibitions, loans and public programming. Preservation of archaeological materials involves security measures and conservation. From a security conscious curator's point of view, the most important criterion for good curation is preservation and security of the

collection. The collections must be preserved for the future. Absolute preservation would be promoted by refusing all access. Absolute access would ensure the destruction of the collection.

Responsible curation is essentially a reasonable position between the two extremes. Factors of collection durability, significance and scholarly or public interest must be considered. Responsible curation balances use and preservation.

Associated with the responsibility of ongoing research and educational use is the obligation of the repository to maximize the utility of each artifact or sample. In a context of streamlined institutional objectives, a repository must be able to justify the curation of each collection and each object. Many curators consider the most effective means of justifying curation is to use the collection as often as possible, in as many different venues as possible. This provides an objective, quantifiable measure which may be reported. This applies not only to the objects themselves, but also the data associated with each object. The increased use may compromise the physical and chemical integrity of the specimen. Thus, it is critical that the demands placed on archaeological materials for current research and educational uses are balanced with the need for preservation of the materials for future uses.

It is important to view archaeological curation holistically. It encompasses objects, specimens, samples and artifacts, and all notes,

drawings, maps, cataloguing, analysis notes, published papers and reports. In the Society for Historic Archaeology (SHA) Standards and Guidelines for the Curation of Archaeological Collections, curation is identified by Lynott and Wylie (1995b) as an integral element of the archaeological process. Its overall significance is such that planning for curation is recommended from the project design phase on. Specific guidance on labeling, storage, documentation, conservation, the facility and its conditions, deaccessioning procedures and human remains are all briefly covered in the SHA Guidelines (Lynott and Wylie 1995b). Curation of excavated material begins at the point of excavation and is ongoing throughout all phases of interpretation and analysis continuing when the collection is turned over to a repository.

This holistic view of archaeological curation was developed in the Frere Report (Frere, 1975). Archaeological curation was defined holistically, encompassing all processes from initial excavation to ongoing care in a repository. The product of archaeology, the collection and its associated data was defined as an archaeological archive. The archaeological archive encompassed the entire product of archaeological investigation, and, more importantly required that this product be organized in an accessible form. This organization promoted the future research potential of the collection. In the Frere report, the development and maintenance of this total archive was the defined goal of archaeological curation.

The basic principles of archaeological curation are quite simple and appear to reflect common sense. However, there are differences of opinion on some of these principles, and most principles, even if agreed upon, are not applied evenly across the country. These principles are ideals which are aimed for, but in no way reflect the actual curation practices found in all Canadian archaeological repositories. These actual curation practices are modified by the availability of human and fiscal r~sources, the legal environment, and the mandate of the repository.

Curation of archaeological collections is important to some archaeologists. Others rarely consider it. On one extreme archaeology is seen as the production of knowledge. The methodology used to attain this end includes survey, excavation and various analytic techniques, among others. Once the final reports and publications are completed, this goal has been reached. The post-analysis life of the collection may be of no interest to a researcher who has finished with the data arising from that investigation. In this extreme, the continued usefulness and even existence of these collections does not matter. Other archaeologists value reposited collections, and devote considerable effort to their preservation and the preservation of the associated data. These archaeologists often view reposited collections assembled by previous generations of excavators as a resource which may provide new knowledge in a time when economic factors preclude extensive excavation.

Once reposited, the archaeological collections may be used by the repository for its own ends, ignoring the responsibility to preserve the archive for future research. The artifacts - the whole artifacts, the significant artifacts and particularly the aesthetically pleasing artifacts may be removed from the site archive and treated with the same procedures as other works of art or objects of historical interest in the museum collection. They are taken out of their context within the site archive and used independently of that context.

A more moderate position may see curation as an onerous but necessary task that should be minimized in order to get on with the important work of archaeology - research and the production of knowledge. Archaeological curation can be extremely time consuming, but it must be seen as a means, not an end. Curation should be a set of procedures designed to facilitate research.

The archaeological archive is a construct which arises out of a disciplinary concern for scientific replicability. The concept is not generally appreciated in museum curation. Museum curators often view all collections in their care within the light of their museum's mandate. In common museum practice, collections are organized for ease of retrieval and use in exhibitions. Groups of artistic works accessioned into the museum's collection as one lot often have little in common. Heterogeneous donations from one source are common and may contain a few archaeological pieces mixed into a collection of

ethnographic and historical artifacts as well as natural history specimens. Such collections are dissembled and integrated into the museums collection. The collection is not physically stored as a unity. The collection management system may retain the collection as a group in some documents, particularly those relating to information on the donor, but the information on the individual pieces is integrated into the data files for each discipline. These curators treat archaeological collections in the same manner as they treat all other collections, and sort all incoming collections according to the needs of the museum. In this case one would expect the materials of exhibitable quality to be individually catalogued and housed in high quality storage. The materials of less than exhibitable quality, possibly the bulk of the collection would be deemed of less use, and stored in lower quality, cheaper, storage where access may be restricted. If the goal of curation is the preservation of the site archive for future research, with little allowance for other uses, the choice of a multi-disciplinary museum as a repository may be counter-productive.

Collections which are assembled in the course of archaeological investigation, rather than amateur collecting, are kept as a logical whole more often. In these cases curators recognize the unity of the collection as objects from one source, from one site or field season. However, if the collection includes artifacts which are of exhibitable quality, the curation goal of maintaining a site archive is often lost.

This tendency of curators to miss the concept of an archaeological collection as a site archive is reinforced by archaeologists who reposit collections in disarray. Once an archaeologist is finished with the analysis of a collection, every effort should be made to ensure the collection is organized, documented and turned over as complete and logically organized as possible. At a minimum, the archaeologist should ensure that all artifacts and other materials are in fact present in the boxes. All records and notes should be present. If the collection is not organized in any other manner, it should at least have clear and structured provenance data linked to each specimen, bag or artifact. Ideally, the repositing archaeologist should include all materials which would facilitate a re-examination of the collection by another researcher. This might include a detailed research strategy, a description of all analysis procedures and results, as well as copies of any published papers discussing the site which go beyond the data included in the final report submitted to the permitting agency. However, too often the ongoing care of the collection is not a priority for an archaeologist wishing to get on with the next project. Regardless, the archaeologist has great deal to gain from an organized reposition of the collection. Disorderly collections are more easily mis-interpreted in subsequent examination, perhaps to the detriment of the reputation of the original investigator.

With the rapid increase of archaeological work in Canada during the 1960's and 1970's, the size of the archive expanded dramatically. These collections were processed, analyzed and eventually reposited in museums, universities, government departments and other institutions, expanding their holdings, in some cases exponentially. Collections management systems originally designed to handle smaller volumes and other types of collections were adapted to meet these demands. Museums adapted collection management systems in order to use the new computer technology. While computerized inventory control was introduced into most larger repositories, the early versions of these systems were typically unwieldy. Difficulties in taxonomy, the lack of standardized terminology and the inability to readily update large files made the early use of computers in collections management a frustrating experience. Using these blunt instruments, it often was not possible to track collections with the precision needed. The repositories' funding was not adequate to provide the resources needed to accept, accession, assess and conserve and store these collections, and large backlogs developed.

With the decrease in archaeological activity in the late 1980's and 1990's, repositories have had some time to 'catch up'. Computer systems have matured, replacing nationally organized databases with smaller, more manageable databases administered by each repository. However, with staff reductions, budget cuts and diminishing resources, the repositories are having difficulty meeting even modest backlog reduction goals. The maintenance and upgrading

of computer systems to allow continued access to the collections and documentation is expensive. Funding for collections management purposes is often a low priority in a repository which faces massive budget cuts. Some repositories have managed to reduce these backlogs through various means, but many others still have no adequate system which permits timely access to collections.

Curation standards

The development of standards is a recent trend in many fields. Archaeologists, museologists, conservators and many others are defining codes of ethics (Greene 1984) and museums are defining standards of general collection management (for example see the American Institute for Conservation of Historic and Artistic Works Committee on Ethics and Standards, 1985; Delroy and Jewett, 1988; International Institute for Conservation - Canadian Group and Canadian Association of Professional Conservators, 1989; Green, 1984; Parks Canada, 1991 1994b; Alberta Museums Association 1990). This is more prevalent in museums which curate natural history collections. As part of this trend toward the definition of standards of care, the Society for the Preservation of Natural History Collections has developed Guidelines for the Care of Natural History Collections (SPNHC) (Society for the Preservation of Natural History Collections, 1994). These guidelines were endorsed by the SPNHC Council, May 15, 1994, and reflect the result of input by professionals over a three year period. It was reviewed by individuals from all of the professions associated

with the use and care of natural history collections: collection managers, curators, conservators, administrators, research scientists, registrars, archivists, etc.. Although guidelines have been developed for other types of collections, such as biological and geological systematic collections (Fitzgerald, 1988, Garrett, 1989.), and the International Accord on the Value of Natural Science Collections developed at The International Conference on the Value and Valuation of Natural Science Collections, held at Hulme Hall, Manchester University, UK, from 19-21 April 1995, no comparable guidelines have yet been developed for archaeological collections management.

Canadian heritage and archaeological legislation or policy occasionally directs that the collections will be 'managed according to standards and procedures accepted in the relevant disciplines'. Yet, explicit written standards and procedures in the archaeological literature are rare. Though many policies often refer to following accepted standards for the discipline, more often than not, these standards are traditional practices rather than principles or measures established by a guiding authority such as the International Committee On Museums or a national body. Because of these vague "standards" it is difficult for museums to know whether they are fulfilling their policy objectives. It also makes it hard for institutions to find useful yardsticks by which they can measure their progress.

The United States has recognized this problem area, treating it as a 'curation crisis' (Childs 1995). The American Corps of Engineers has

designated Mandatory Centers of Expertise for the Curation and Management of Archaeological Collections, in charge of dispensing federal money to other Corps Divisions/Districts in order to comply with federal laws such as the Native American Graves Protection and Repatriation Act (NAGPRA), as well as 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections. The latter is a federal regulation that provides definitions, standards, procedures, and guidelines for Federal agencies to preserve archaeological collections and associated records, recovered under the authority of the Antiquities Act, the Reservoir Salvage Act, section 110 of the National Historic Preservation Act or the Archaeological Resources Protection Act. Section 101(a)(7)(A) of the National Historic Preservation Act requires the Secretary of the Interior issue regulations "ensuring that significant prehistoric and historic artifacts, and associated records, . . . are deposited in an institution with adequate long-term curatorial capabilities."

However, 36 CFR 79 offers only very general guidance, and specific standards and procedures for the implementation of "proper" archaeological collections management are not yet developed from this rule. For example, the Society for Historical Archaeology (SHA), citing 36 CFR 70 as a starting point, issued its own "Standards and Guidelines for the Curation of Archaeological Collections" which addresses artifact cleaning, labeling, storage, documentation, conservation, etc. Other federal agencies, such as the National Park Service, has published the Museum Handbook with an appendix on the

curatorial care of archeological objects. The Corps of Engineers has a regulation, ER 1130-2-433 titled "Collections Management and Curation of Archeological and Historical Data" (30 April 1991), which offers some basic guidance but does not pretend to be a thorough "how-to" document on collections management.

In one of the few explicit published guidelines dealing with some general issues in the curation of archaeological materials, the concept of stewardship of archaeological resources cited in the Society for American Archaeology Bylaws (1989) has been extended (Lynott and Wylie 1995a) to include not just in situ archaeological resources but the site archive and associated documentation (Lynott and Wylie 1995b).

In addition to the curation of artifacts and samples, there is now an urgent need for safe, secure, long-term storage of the machine-readable data from archaeological investigation. Once stored, the data should be made accessible, but the urgent task is to act now to preserve files before more are lost. To preserve such data and to provide the mechanisms for making them accessible, some archaeologists and repositories are making data accessible through the World Wide Web. These projects have been started with a certain sense of urgency in order to prevent the loss of machine-readable archaeological information which is at risk, in particular irreplaceable excavation records. Therefore, there has been an emphasis on archiving such records. However,

newly created data files from excavations and from secondary scholarship are equally important, if not in imminent danger and are also being made available.

Archaeological curation is changing dramatically, and any standards developed must reflect this. A decade ago many repositories curated human remains as part of the archaeological collections. Today, in most Canadian jurisdictions, human remains resulting from excavations of prehistoric sites have been turned over to the First Nation involved for reburial. In some cases, the repository actively participates in the reburial (McAleese, 1995). Only one or two institutions still accept human remains from recent excavations. In most cases the remains are reburied on the site, or excavation is halted, obviating the need for on-going curation. In the United States, federal legislation requires the return of all human remains and mortuary inclusions (the Native American Graves Protection and Repatriation Act of 1990), and sacred objects.

Similarly, repositories are changing their curation practices of materials deemed sacred by First Nations or other interested parties. As First Nations communities and museums begin to establish more co-operative relationships, a mutual recognition of opportunities for the cultural exchange of ideas and information on the nature and meaning of collections appears to be emerging. This has led some curators to reexamine the nature of museum curation as a primary method of preservation as many Native communities begin to assert alternative methods of preservation and treatment (Janes and Conaty, 1992).

The artifacts, samples, and other materials resulting from archaeological investigation have a distinct life cycle. The wide variety of taphonomic processes which act upon these materials prior to recovery are the subject of a number of studies. However, the examination of the effects of recovery, analysis, reposition and curation on archaeological collections remains largely unstudied. This dissertation is a first step in defining standard practices for archaeological curation. Further research may include large scale sampling of archaeological holdings, and a systematic examination of the effects of post-excavation curation processes.

Current curation practices

The post-excavation life cycle of archaeological materials may be quite complex. Some of the processes and aspects of treatment and handling commonly encountered are listed below. This section will give the reader a background in current curation practices, setting the stage for the context and principles of curation which are outlined and discussed in the following chapter.

Materials in archaeological collections are preserved to document human activity in given localities at a given time, to document and support the conclusions drawn, to be referred to in re-analysis of past research, and to be available for other research and other educational purposes. Materials are collected during field research, and form part of the basis of archaeological analysis.

Many archaeological collections contain thousands, if not hundreds of thousands, of individual pieces that require care. An individual specimen may contain hundreds of related pieces. Thus guidelines for collection management and care must take into consideration the reality of large quantities of specimens and numerous pieces per specimen.

Records containing the provenance, identification, condition, description, and other aspects of the materials, when recorded in a permanent manner enhances the scientific value of the materials. These records may actually have to substitute for the specimen or artifact should the specimens themselves deteriorate or be destroyed.

A repository's program for managing and caring for collections exists within the context of its mandate and resources. The tensions brought about by conflicts between the goal of the preservation of archaeological evidence and the broader mandate of the institution are discussed below.

Management and care of collections of archaeological materials should be governed by respect for the scientific, historic, physical, cultural, and aesthetic integrity of the material and its associated data. Therefore concern for its future should include protection against unnecessary damage, loss, or

alteration that might affect its future research, educational, or exhibition potential.

Curatorial processes

Within this context, an archaeological collection undergoes certain routine collections management procedures.

Accessioning is the formal process used to legally accept and record an archaeological collection or artifact (Malaro, 1979). Accessioning involves the creation of an immediate, brief and permanent record utilizing a control number or unique identifier for objects added to the collection from the same source at the same time, and for which the institution accepts custody, right, or title.

Registration is the process of assigning an immediate and permanent means of identifying a specimen or artifact for which the institution has permanently or temporarily assumed responsibility. It is one facet of documentation.

Cataloging is the creation of a full record of information about a specimen or artifact, cross-referenced to other records and files; it includes the process of identifying and documenting these objects in detail. Archaeological cataloguing is usually begun by the repositing archaeologist, who records basic information (sometimes termed 'tombstone' or 'skeletal' data although the use of these

terms is not restricted to catalogue records of human or faunal remains) and that information which is necessary for his or her research. The repository collects and records the basic information (which may be as restricted as only Borden number, object type or name, quantity and location in the storeroom) using either data supplied by the repositing archaeologist or creating it. Extended cataloguing may or may not be carried out by the repository. This may involve the determination and entry of cultural affiliation, date, permit number, comments of the physical condition of the object, photograph numbers, location within the repository and a host of other fields. The Canadian Heritage Information Network Data Dictionary lists and defines a potential 611 fields or categories of information which may be recorded in cataloguing an archaeological artifact, and a further 77 fields or categories of information which may be recorded in cataloguing an archaeological site (Delroy and Jewett, 1988). Cataloguing is ideally accomplished on arrival, but intensive archaeological activity in the 1960s 1970s and early 1980s caused decade-long backlogs in even basic cataloguing. With diminished resources, few repositories now have the resources to go beyond a very basic level of documentation.

The catalogue record forms part of the documentation of the collection. Documentation is all supporting evidence, recorded in a permanent manner using a variety of media (paper, photography, electronic imaging, *et cetera*), of the identification, provenance, condition, history, or scientific value of an

archaeological specimen, artifact, or collection. This encompasses information that is inherent to the individual specimen and its associations in its environment as well as that which reflects processes and transactions affecting the specimen (e.g., accessioning, cataloging, loaning, sampling, analysis, treatment, etc.). Documentation is an integral aspect of the use, management, and preservation of a specimen, artifact, or collection.

Collection care is the development and implementation of policies and procedures to protect the long-term integrity of the collection, as well as associated data and documentation, for use in research, education and exhibits.

Collection management is the preservation, accessibility, and utility of collections and associated data. Collection management processes involve responsibilities for recommending and implementing policy with respect to: acquisition, collection growth, and deaccessioning; planning and establishing collection priorities; obtaining, allocating, and managing resources; and coordinating collection processes with the needs of curation, preservation, and specimen use. These responsibilities may be shared by collection managers, archaeologists, curators, and other institutional administrators.

Collection maintenance involves routine actions that support the goals of preservation of and access to the collection. Activities such as monitoring,

general housekeeping, providing appropriate storage and exhibition conditions, and sometimes organizing a collection may be considered maintenance.

Some archaeological materials must be treated in order to preserve them. Subsequent preparation, sampling, or destructive analysis may be necessary to fulfill the goals of research or legitimate educational uses. Conservation has been described as the application of science to the examination and treatment of museum objects and to the study of the environments in which they are placed (Duckworth et. al. 1993). It involves activities such as preventive conservation, examination, documentation, treatment, research, and education (American Institute for Conservation, 1993 draft). Ideally, all incoming archaeological materials should be assessed to determine their need of conservation treatments in order to avoid deterioration, which is a change in an object's physical or chemical state. These assessments or condition reports are rarely done, and never done for entire large collections, again due to lack of resources. Deterioration is distinct from damage in that damage is the "consequent loss of attributes or value: aesthetic, scientific, historic, symbolic, monetary, etc." (Michalski, 1992).

Preservation involves those aspects of conservation that involve preventive measures, such as maintenance procedures and correcting adverse environmental conditions. Preservation may also include treatments carried out initially to prepare specimens for analysis.

Preventive conservation involves actions taken to minimize or slow the rate of deterioration and to prevent damage to collections It includes activities such as risk assessment, the development and implementation of guidelines for continuing use and care, appropriate environmental conditions for storage and exhibition, and proper procedures for handling, packing, transport and use. These responsibilities may be shared by collection managers, conservators, subject specialists, curators, and other institutional administrators.

Stabilization is the treatment of an object or its environment in a manner intended to reduce the probability or rate of deterioration and probability of damage.   Treatment involves actions taken, physically or chemically, to stabilize or make accessible a specimen or artifact, which may include techniques such as preparation, cleaning, mending, supporting, pest eradication, and consolidation.

Finally, an object or collection may be deaccessioned. Deaccessioning is the formal process used to remove a specimen permanently from the collection, with appropriate transfer of title (Malaro, 1979, Tolmatch, 1990b). The concept of deaccessioning is applied quite broadly in the management of historical collections or collections of art or natural history specimens.   In these disciplines, it is possible to have 'duplicates'. A museum which documents pioneer history should certainly place an upper limit on the number of sad irons

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which are needed. Galleries that collect prints may choose to keep a print in excellent condition, and deaccession a print of the same run in poorer condition. Natural history specimens may be considered redundant if more than a certain number of specimens of a given species is collected.   With these collections deaccessioning is a reasonable measure to employ in the development of a comprehensive collection. The mandate of some historical museums, some art galleries and natural history collections may be the assembling of a representative sample of a population.

In archaeological collections management, however, a more restricted understanding of deaccessioning has been developed as a result of the archaeological need for scientific evidence. Deaccessioning within the context of archaeological collections management recognizes that the total interpretive sample is needed to ensure the preservation of the archaeological record. Normally, archaeological deaccessioning may only occur if an object or collection has deteriorated to the point of inutility, or if it is recognized as a health or safety hazard. The most common reason prompting deaccessioning in all types of collections is generally a survey of a collection resulting in the removal of superfluous items. Until recently, superfluous archaeological items were defined as those which had no bearing on the archaeology, for example a tennis ball or coffee cup found in a box of artifacts, or possibly modern unmodified bones.

Deaccessioning has been accepted as an integral part of responsible collections management and development in the United States (Weil, 1987). However, many curators are opposed to deaccessioning in principle as collections which may be 'unfashionable' at the moment may be of great value in the future (Richardson, 1987). Ominously, in the past few years there has been a shift in definition of superfluity, driven by administrations eager to control storage costs. Today there is a growing pressure to deaccession objects which do not conform to the limits of a newly defined, restricted mandate. In such a situation, the administration of a repository or museum will redefine the institutional mandate, limiting the collecting policy from a wide geographical region to a more limited area, for example. In this situation, those collections arising from the excluded geographical region are deemed superfluous and are subject to deaccessioning. This may 'rationalize' the collections, bringing a new rigour to the collecting activities, but it also endangers those collections for which the institution no longer assumes responsibility. In some cases these collections may be transferred to another repository, but this is not always possible.

Archaeological curation is carried out within an international, federal and provincial legal context. Canadian federal, provincial and occasionally municipal statutes create the legal environment of archaeological curation in Canada. There are several United Nations conventions which also have a bearing on curation.   Federal legislation has been proposed, but no comprehensive strategy or legislation on archaeological issues has been passed (Burley 1994). The few statutes which do have a bearing are mentioned below.   Heritage issues are usually covered under provincial legislation.   There is a variety of approaches, from provinces like Quebec and Nova Scotia which claim Crown ownership of all archaeological collections to those which, like Manitoba and New Brunswick, provide for ownership by the landowner or finder.   The residence of title has some effect on curation, and is discussed below.

The international context of heritage legislation.

There is a brisk international trade in antiquities, many of which are looted from archaeological sites.   Attempts have been made to control this trade through the United Nations Educational, Scientific and Cultural Organization's (UNESCO) conventions and recommendations.   Conventions outline the co-ordinated regulations which signatory countries agree to enforce. Recommendations, on the other hand, are nonreciprocal.   These recommendations are proposed and ratified by the United Nations in order to

influence the legislation and policy of member national governments. UNESCO conventions and recommendations recognize the rights of peoples to their past. This position is based on a tacit assumption that national governments tend to represent a unified, cohesive group. In multicultural countries, as more and more are now, national governments are becoming less useful agencies in the protection of the past.

The first United Nations recommendations dealing with archaeology was the 1956 Recommendations on International Principles Applicable to Archaeological Excavation (New Delhi). The New Delhi recommendations established minimum goals for archaeological resource management and proposed direct government control of archaeological excavation to ensure it was undertaken only for scientific study. This was primarily directed against illicit looting of sites, and did not discuss curation of resulting collections.

In 1968 the Recommendations on the Preservation of Cultural Property Endangered by Public or Private Work was passed, forming the basis for salvage archaeology. This measure proposed the establishment of site and artifact inventories which could be used proactively in evaluating sites in mitigation. This is the first mention of specifically curatorial activities in an international convention.

The 1972 Convention for the Protection of the World Cultural and Natural Heritage developed mechanisms to recognize world heritage sites and national heritage sites. These mechanisms developed into the World Heritage Designation Programme, where sites are designated as being of world heritage importance. Again, site protection was the main focus.

The 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Cultural Property provides a powerful tool in the control of the black market in antiquities. This convention enables signatory countries to designate cultural property as being of national significance, therefore protecting them from export and allowing for repatriation in some cases. Each country was empowered to create a registry of significant property, prompting museums and private owners to prevent the transfer of registered objects. Before becoming a signatory nation, each country had to draft its own similar legislation. Canada signed the convention in 1977 after the passage of the Cultural Property Import and Export Review Act. Passage of this legislation was delayed by a vigorous antiquities lobby.

The UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects, passed on June 24, 1995 covered the issue of the international return of stolen or illegally exported cultural objects. Specifically, it calls for the restitution of stolen cultural objects and the return of cultural objects removed from the territory of a Contracting State contrary to its law regulating the export

of cultural objects for the purpose of protecting its cultural heritage. UNIDROIT applies to Canadian archaeological objects if they have been stolen or illegally exported contrary to Canadian law.

The federal context of archaeological legislation

At a federal level, the first heritage legislation may be found in the British North America Act of 1867. Sections 90 and 91 outline the division of federal / provincial jurisdictions, giving ownership and control of natural resources to provinces. While the act does not specifically mention cultural resources, on the basis of the precedent they have been assumed to be a provincial responsibility, except where the resource is on federal land. This gives the federal government the mechanism to shift responsibility for archaeology to the provinces. Thus the fiscal burden of archaeology and cultural resource management and the curation of archaeological collections becomes a provincial responsibility. Neither are archaeological resources on federal crown land protected by legislation or the explicitly defined mandate of a federal department.

The 1951 revisions to the Indian Act provides a small measure of protection to specific resources on reserve lands, such as rock art, graves and totem poles. This legislation was specifically directed against major looting of sites by foreign museums. In many cases, such as the Fifth Thule Expedition, excavations were carried out with archaeological technique accepted at the time and cannot be considered 'looting' (Mathiassen, 1933). However, foreign

archaeologists affronted Canadian national pride when the artifacts and human remains were exported to Denmark. Ongoing lobbying on the part of the Inuit Cultural Institute and the Government of the Northwest Territories effected the repatriation of the remains of some 60 individuals taken under the aegis of the Fifth Thule Expedition reburying them at Naujuat in 1993 (Northwest Territories, 1990). The mortuary inclusions, however, remain in Copenhagen.

In 1967 the Indian affairs and Northern Development Act placed administration of federal concerns for heritage, parks and Indian affairs within in the purview of the Department of Indian Affairs and Northern Development. The 1953 Historic Sites & Monuments Act provided for plaquing of archaeological and other sites. The 1968 National Parks Act created National Historic Parks and directed government to preserve sites. None of these statutes addressed issues relating to the preservation of collections and documentation resulting from archaeological activity.

As mentioned earlier the 1977 Cultural Property Import and Export Review Act was passed in compliance with the United Nations 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Cultural Property. The Canadian legislation provides for mechanisms to regulate import and export of movable cultural property. However it has proved to be of little value in protecting Canada's archaeological heritage as expert examiners for archaeology, as designated under the Act, have largely refused to

designate objects or collections as being of national significance, as this involves assigning a monetary value to objects and thus has the potential of stimulating the illicit market in artifacts. While the Canadian Archaeological Association's Loy resolution of 1976 has been rescinded, many archaeologists and most expert examiners refuse to evaluate objects, even in order to prevent their export. This Act has been in revision since it was passed. It was reviewed in 1984, and is still under review, unchanged.

The provincial context of archaeological legislation

Provincial legislation is the most likely locus for provisions dealing with curation of materials resulting from archaeological investigation. Provincial funds are designated for mitigation projects resulting from highways and other development. It would seem reasonable that provision for the preservation of the results of those projects should be mentioned in provincial legislation. Provincial and territorial legislation require an excavation permit and report on permitted archaeological investigation. Most jurisdictions make at least token provision for the protection of significant sites through purchase, however these programmes are often emasculated through funding restrictions.

Beyond these commonalities, provincial and territorial legislation varies greatly. Few mention the curation rf collections specifically, but direction is taken from provisions of ownership. Provincial departments which administer this legislation are guided by the position taken on Crown ownership of

archaeological resources or private ownership of these resources. In British Columbia, while proposed revisions would have altered these provisions, the Heritage Conservation Act permits private ownership. In Alberta the 1973 Alberta Heritage Act, and the subsequent 1980 Alberta Historical Resources Act are primarily focused on archaeological mitigation and archaeological resource management in response to the effects of oil and gas exploration and extraction. Saskatchewan's heritage legislation (the 1975 Heritage Act and 1980 Heritage Property Act) did not claim Crown ownership, but attempted to create a register of all private archaeological collections. This was administered by the Archaeology Section of the Saskatchewan Museum of Natural History in 1983. Private collectors who requested registration of their collections were visited, their collections catalogued and the catalogue entered onto the museum's database (Conaty 1989). The original aim was the identification of collections held privately, but this act has been largely ignored by the private landowners who have archaeological collections. In Manitoba, private ownership of archaeological resources is explicitly recognized, leading the department to recognize avocational permits on the same footing as professional permits. The activities permitted may be restricted, but an avocational archaeologist is issued a permit in the same manner as a professional. An avocational permit usually restricts the holder to no collecting activities, or to surface collections only. A frequently encountered example is a person wishing to use a metal detector, who would be issued a permit, but would be restricted to certain locations such

as drive-in theatres. Avocational collections may be catalogued and registered with the province, but this is not enforced.

The 1980 Ontario Heritage Act stipulates Crown ownership of artifacts. Specifically the collections are deemed to be the property of the Crown, in so far as the Crown wishes to possess them. This confusing phrase has had unfortunate results. The provision has been interpreted to mean that all artifacts must be collected during an excavation or survey, in case the Crown might wish to possess them. All artifacts means all brick fragments, all pieces of chipping detritus, and could logically be extended to candy wrappers cleared from the surface of the site. Most archaeologists do not wish to recover 100% of the non-diagnostic materials. Repositories are overcrowded and do not wish to accept non-diagnostic materials. While all artifacts are collected, there is no provision in the Act which requires reposition of the collections recovered. As many repositories are feeling the effects of budget restrictions, and storage over crowding, some archaeologists are finding it difficult to find a repository willing to take their collections. The Act established large co-ordinated regional offices which provide repository services, but these have had major downsizing under the Rae government's social contract, dropping from six offices to three. These three face a budget cut of 28% in the second half of the fiscal year 1995/96 under the Harris government. This lack of support is preventing staff in the regional offices from carrying out their mandated duties and will soon impact curation. The Ontario Museums Association has facilitated discussion around

the establishment of designated centralized repositories, but the finances are not available to begin such a project.

In the Quebec Cultural Property Act of 1975 and the Regulation Respecting Archaeological Research of 1979 private ownership of artifacts was recognized. Unlike the application of the Ontario legislation, archaeologists typically leave 80% of artifacts found on site (William Moss, pers. comm. 1995). With the drive toward decentralization of government services underway in Quebec, regional archaeological agreements are 'on hold' until the greater political context becomes clearer.

Quebec currently has a regional centralized repository system such as the Ministry of Culture laboratory and repository facility in Quebec City which lends space to the City of Quebec archaeology programme. As the province no longer has funds to administer the centralized facility it intends to decentralize as many government services as possible to the municipal or regional level.

The City of Quebec and the province have a series of five year agreements covering a variety of fields, including heritage. The five year agreement expired early in 1995 and has not yet been renewed, therefore the funds which were allocated previously are not guaranteed for next year. There are no major excavation projects planned within the boundaries of the city of Quebec in the foreseeable future. None are projected until the next five year agreement can be negotiated (Moss, 1995 pers. comm.).

The Quebec legislation does not mention locus of title, therefore the owner of the land may claim custody and title of all archaeological materials. In practice however, few landowners make such claims, unless, like the recently excavated Seminary of Quebec, they are planning a museum facility of their own. When the City of Quebec funds archaeological investigation on private land an agreement deeding title and custody of the resulting collections to the city is signed.

The Nova Scotia Special Places Act of 1980 provides for the preservation, regulation and study of archaeological, historical and paleontological sites. The province claims ownership of artifacts. In Nova Scotia the government archaeological permit system is administered through the Curator of Special Places, with input from the Curator of Archaeology, both of the Nova Scotia Museum. With this consolidation of authority, the museum is dictating many pre-reposition curation practices with the force of the permit office. In other jurisdictions, such as British Columbia, permits are issued by one branch of government (an Archaeology Branch), and collections reposited with another (the Provincial Museum). Under the arrangement in British Columbia, different arrangements may be possible, creating room for negotiation between the archaeologist and the repository. For example, an archaeologist may be able to catalogue a collection in a manner suitable to their research without committing resources to cataloguing a collection to the specifications set

out by the provincial museum. In Nova Scotia all archaeologists are required to reposit with the Nova Scotia Museum, giving the Curator of Archaeology control over the pre-reposition curation procedures employed by archaeologists. A standardized cataloguing system is being developed by the curator at the Nova Scotia Museum. Use of this system will be required in future. This same consolidation of permit granting power and the locus of reposition exists in New Brunswick, the Northwest Territories and Yukon. Given continually shrinking federal transfer payments and reduced provincial and territorial budgets, consolidation of these functions may be expected in other jurisdictions. The difficulties which are emerging in Nova Scotia may serve as a warning to other provinces which are downsizing culture and heritage departments.

The New Brunswick Historic Sites Protection Act of 1984 does not claim ownership of objects on private land, and does not protect sites on private land. Here the emphasis has been on co-operation, particularly co-operation with the Micmac and Malecite. While the New Brunswick Museum is the designated repository, all archaeological materials were transferred from the museum to the provincial government warehouses some years ago. The government curates these collections, and is working out co-management strategies with the First Nations.

While the 1970 Yukon Act and Northwest Territories Act gave these territories some provincial powers, until the 1980's all archaeology was

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administered through the National Museum of Man in Ottawa, now the Canadian Museum of Civilization in Hull. Under the Northwest Territories Archaeological Sites Regulations (1978), pursuant to the Northwest Territories Act, all specimens collected under permit are to be submitted to the Minister of Northern Development, who may direct any specimens to the National Museums of Canada, Public Archives of Canada or to some other institution, or be disposed of. The Prince of Wales Northern Heritage Centre was designated as an archaeological repository for these collections by federal cabinet in 1983 (Irwin 1983.) The Prince of Wales Northern Heritage Centre has established curation guidelines for these collections (Northwest Territories 1992a, 1992b). While no similar legislation has been passed in Yukon, all materials are retained in the north.

In summary, while provincial and federal jurisdictions have legislation which empowers governments to issue archaeological permits and regulates archaeological resource management the legislation ignores the results of these excavations, rarely making specific provision for the protection of the archaeological collections as well as the sites.

First Nations and archaeological curation

Although federal, provincial and territorial heritage legislation is often unclear on the question of ownership of material from archaeological excavations, Canadian museums and repositories must work out the practical

details of archaeological curation with First Nations (Pokotylo and Holm, in press). Discussions on logistics are often set with a larger context of museum/ First Nations negotiations on exhibition focus (McGhee 1989) and larger epistemological concerns (Trigger 1988). Both First Nations and museums recognized the need for a co-ordinated approach (Ames 1988). Therefore, the Assembly of First Nations / Canadian Museums Association Task Force was struck in 1984 to examine issues in the curation of First Nations materials in Canadian museums (Hill and Nicks 1992). While many of the most contentious issues were found in ethnological collections, recommendations regarding archaeological collections were also made. For example, the task force recommended the return and reburial of all human remains, promoted First Nations access to collections, First Nations control over the interpretation of the collections in an exhibition setting and employment for native people in museums (Assembly of First Nations / Canadian Museums Association 1989). Museums and First Nations are implementing these recommendations as co-management strategies and repatriation where appropriate (Pokotylo and Holm, in press. Gaye Frederick, 1994 pers. comm., Tom Hill 1995, pers. comm. George F. MacDonald, 1995, pers. comm.).

Fiscal and institutional environment

Cultural institutions of all types are under siege. Museums, governments and universities which curate collections are under increasing pressure to streamline procedures, reduce waste and cut programmes to the minimum in an

effort to reduce costs. Archaeological curation is an extremely costly, labour intensive enterprise. There is little return on these dollars in increased public relations.

Museums have been the target of many aspects of fiscal restraint, from staff reductions and bureaucratic re-organization to discretional budget cut backs (Canadian Museums Association 1994). The federal Museums Assistance Programme, provides funding that facilitates collections documentation and conservation has experienced a 38% reduction in its budget during the fiscal year 1995/96 and now has fewer dollars to disperse than it has had at any time since its inception in 1972 (Young, 1995:28-9). The Canadian Conservation Institute, which provides materials research and treatment of archaeological artifacts will be reduced by 14% over three years beginning in 1995 (Canadian Museums Association 1994).

In a similar initiative, during September, 1995 the National Museums of Canada (the Canadian Museum of Civilization, the National Gallery of Canada, the National Museum of Nature and the National Museum of Science and Technology) went through a series "special examinations" by the Office of the Auditor General of Canada. These are comprehensive or 'value for money' audits which the Auditor General is required to do every five years, pursuant to the museum's financial legislation (Needham 1995 pers. comm.). The Auditor General made strong recommendations to develop and set in place formal

performance indicators of economy and efficiency (MacDonald, pers. comm. 1995). These would require museum staff to document every action in terms of its fiscal economy and efficiency.

In archaeological collections management, the effects of fiscal restraint and the impetus toward improved programme efficiency have been most clearly seen in the development of cataloguing standards. The concept of cataloguing standards is not new, but has been promoted as a collections management tool for some, generally in conjunction with computerization of collection data. Cataloguing standards for archaeological collections have been developed but have not been generally accepted by researchers. The first impetus toward cataloguing standards was expressed during the 1970's by the National Inventory Programme, now the Canadian Heritage Information Network, and others (for example the Archaeological Data Recording Guide, Loy and Powell, 1977) when computers began to be used in the cataloguing of data. The software used in early computers required strict adherence to authority lists and defined data standards for content and format. The difficulties involved in updating information quickly rendered the databases out of date. In many cases, archaeological collections managers were skeptical, regarding the development of collections oriented databases as a waste of time and resources. Rather they concentrated on the development of the National Inventory of Prehistoric Sites, documenting sites on a national basis, leaving collections to provincial administrators. As archaeological resource

management departments were established in the provinces, the national presence withdrew to north of 60 degrees, eventually being phased out in the 1994 integration of the National Inventory office with Parks Canada (Judith Marsh, 1995, pers. comm.).

Databases designed to aid in the management of archaeological collections have developed, but are not easily used. The requirement of authority lists of permissible terminology has been a point of much argument. At the roots of these discussions are differences in theoretical perspectives on the identification, uses and value of material culture.

This attention to authority lists may still be seen in the newly developed archaeological cataloguing software under development at the Nova Scotia Museum. Commercially available software was modified to act as a cataloging form for repositing archaeologists. It is limited to sixteen fields of information, some fields with authority lists, and will not accept user modification. The Museum will be requiring all repositing archaeologists to submit catalogue data for collections in this format (Stephen Powell, 1995 pers. comm.), beginning in 1996. In this way the curator of the repository is controlling the cataloguing and some aspects of the research done by the investigating archaeologist.

In a similar vein, the Standard Osteological Database was developed at the University of Arkansas, and has been distributed as a software package. It

provides a standardized format for the description and cataloguing of human osteological material. The use of this package is optional, at least in Canadian repositories. Researchers often resist filling out the standardized forms as a waste of time and resources (Jerry Cybulski, 1995 pers. comm.). In Dr. Cybulski's view, a researcher working within a tight schedule and budget usually does not have the time to record data extraneous to the project at hand or the finances to hire a technician to perform these tasks.

Normally the types of data required by the repository are not the same as the data required for analysis. In some institutions collections managers are in a position of dictating documentation standards. If a collections manager insists that an archaeologist collect certain data while in the field, and require that the data be turned over in a defined format, an archaeologist may seek an alternate repository, where an alternative is possible under provincial or territorial legislation. A repository may refuse to accept a collection which does not meet cataloguing standards, leaving an archaeologist with additional expenses which must be met before another permit may be issued.

Another form this could take is the requirement that an archaeologists wishing to study a reposited collection must catalogue it to repository standards. While this may reduce a cataloguing backlog for the institution, it would place an undue stress on researchers.

The major museums in Canada have seen a marked shift in emphasis from research and collection building and maintenance to public exhibitions and popular publication. Museum professionals then become information management specialists who facilitate access to information, to and from all segments of the public, Native and non-Native alike. Museum professionals, skilled in conservation, preservation and analysis, have a role of continued care for the objects. Representatives of the cultures that created the objects will provide the perspective of the objects in an on-going, living cultural context, which is seen as far more relevant than display of objects on the museum walls. This change in mandate and direction has had a profound effect, marginalizing collections curation and research.

Chapter Five   A Survey of Archaeological Curation in Canada

During the summer of 1995, I contacted a wide variety of people associated with the issue of archaeological curation.   As archaeological collections are curated in a wide variety of contexts in Canada, I attempted quite a broad survey, from federally administered institutions and a crown corporation, provincially run agencies responsible for archaeological resource management and mitigation, First Nations' cultural centres, community and university based museums. I spoke to archaeologists affiliated with universities and government as well as contract archaeologists. I included two branches of Parks Canada (Atlantic and Prairie regions) as well as the Ottawa offices. Some of those interviewed were excavating archaeologists, visited on site and taped to the sound of student's scraping trowels. Some were associated with archaeological repositories, as directors, researchers, archaeologists, curators, provincial archaeologists, archaeological collections managers, cataloguers, registrars or conservators.   Some were associated with professional organizations; the Canadian Archaeological Association, the Canadian Museums Association, the Ontario Museums Association and the Alberta Museums Association. I visited historic reconstruction parks and cultural centres run by First Nations organizations. One person interviewed was formally retired, though still active. Most had created archaeological collections which were now being curated in a Canadian repository. Over half had attempted the re-analysis of a collection reposited some years earlier by other researchers.

The format of the interviews was informal. I presented the focus of my research briefly and led the discussion through a series of questions. During my thesis colloquium, the issue of confidentiality arose during the discussion of the research. At that time it was thought that some archaeologists and repository/museum staff might only be willing to participate in the study with the assurance of confidentiality. I found this to be the case in many instances. In order to secure their forthright co-operation, I agreed to keep the identity of the institutions confidential in discussions of specific details of curation. All respondents agreed however, that I could supply these details in an oral defense. In addition, I agreed that in subsequent published work using these data I will identify institutions and people only after the people and institutional staff have vetted the work and have given their written permission. Institutions are identified here where the information has been published or is publicly available from government sources.

Each interview lasted a minimum of two hours, and each was tape-recorded. I offered each interviewee the option of not tape recording the session, but was granted permission in every case. The tape recorder was kept visible at all times to remind the interviewee that a recording was being made. As the discussion progressed I noted the responses on a four page questionnaire, skipping those subjects which were not relevant given the experience of the interviewee.

After the interview, I transcribed the tapes and recorded remarks from notes on the questionnaire sheets. The few discrepancies or further questions which arose at this point were discussed through email and telephone conversation. Specific answers were quantified wherever possible and comparisons and contrasts of the data were done.

The questionnaire was designed for use in discussions in a variety of repositories, those affiliated with a government department, a university department or a museum. Questions were directed to individuals working in a broad number of sub-disciplines. Therefore, the total questionnaire was not applicable to every repository and every interviewee. For example, questions regarding ownership did not apply to conservators working in a service institution which did not have permanent custody of an artifact. Government administrators, on the other hand, were concerned with ownership issues, but were less concerned with the actual physical storage conditions of collections.

The analysis and discussion of the questionnaire responses is hampered in two ways. First, not all questions were applicable to all institutions and respondents. This has resulted in a sample which cannot be quantifiably described and analyzed beyond a basic description such as frequency. Secondly, the institutions are not identifiable, and trends relating to either

geography, governance structure or curation model have not been defined. Subsequent work on this topic this will be necessary.

Questionnaire

The following areas were discussed during these interviews and tours:

1   The characteristics of the permit system and the manner in which collections are selected for reposition.

2   the parameters of provincial or territorial legislation.

3   the requirements of legislation according to disciplinary (archaeological) standards and

4   a survey of curation practices and procedures in use in the repository.

The following specific questions were addressed:

1   Determination of the characteristics of the permit system - the manner in which collections are selected for reposition.   Where does ownership of archaeological materials reside in this province or territory? What is the normal manner in which permits are obtained in this province or territory?   Are there anomalous circumstances and exceptions to this procedure?   How is the institutional repository chosen?   Who is responsible for the collections post-excavation/pre-reposition?   Who is responsible for the collections post-reposition?

2   Determination of the parameters of legislation

Obtain a copy of relevant provincial, territorial or federal heritage legislation. Are there written policies which are derived from this legislation? What audit procedures (if any) are done? Are there written procedures manuals which are derived from these policies? What audit procedures (if any) are done?

3   Archaeological / disciplinary standards of curation.

How should a museum care for its archaeological collections? What are the requirements of a repository? What kind of building should it have (physical security)? What kind of storage facilities should it have (preventative conservation)? What kind of conservation services should it have (remedial conservation)? What kind of collection documentation services should it have? What kind of training should staff have?

4   Survey of curation practices - Acquisition guidelines and standards

Are there written guidelines or standards for the acquisition of incoming collections? Does the repository accept any collections offered? If not, what are the criteria by which you judge acceptance or rejection? Are there written curation standards? If so, who is responsible for their application? Are there regular audits? If so, what are the audit procedures? Does the registration system used for archaeological collections allow for the multiple and collective nature of archaeological collections, or is it a forced adaptation of a system

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designed to deal with other types of data? Are there 'special artifacts' registered differently from the system used for other archaeological collections? Can the entire documentation on the site be reassembled and reconstituted? What safeguards are built into the system to ensure this? Can all documentation be found? Is there an inventory which lists which sites have (for example) aerial photographs, such that one can know if all documentation has been located or not?

Is it possible to find a 'type specimen', for example for publication, easily? Does the repository actively support research? Has the repository sponsored archaeological research either survey or excavation, staff or contract or is the repository collecting passively - taking whatever offered from contractors? Are non-artifact collections deaccessioned or kept?

How are archaeological collections used? - research and publication, exhibits, public programming, maintenance of reference files of archaeological research done at a specific site, storage of collections, photographs of excavation and field research as well as artifacts, *etc.*.

As a final check, I attempted to locate a specific collection as a test of the collection location system. I tried to find both an unusual collection, such as a physically sensitive collection and a more common collection, for example a lithic collection.

Questionnaire Reponses

Section 1, determination of the characteristics of the permit system - the manner in which collections are selected for reposition. Where does ownership of archaeological materials reside in this province or territory? There is a variety of approaches to issues of ownership of archaeological materials. As discussed in chapter four, Alberta, Saskatchewan, Newfoundland and Nova Scotia claim Crown ownership of all archaeological collections under provincial statute or by policy. Manitoba, British Columbia, Quebec and New Brunswick permit ownership by the landowner or finder. Ontario permits private custodianship of collections which are legally titled to the province and may be possessed by the province if the province wishes to do so. Collections from the lands and waters of the Yukon and Northwest Territories legally belong to the federal crown. All archaeological materials recovered from federal lands south of the sixtieth parallel, are normally curated in federally funded southern institutions.

What is the normal manner in which permits are obtained in this province or territory? Provincial and territorial legislation controls the issuance of permits for archaeological investigation. Archaeological work is usually monitored through government departments. The exception to this is Prince Edward Island, where permits are not required. Permits are obtained through an application process, which may or may not include vetting by a number of

outside agencies. Five jurisdictions require the approval of a band council near the site if the archaeology involves prehistoric or First Nations materials. In all other jurisdictions a letter of support from an appropriate First Nations group facilitates the permit approval process, but is not strictly necessary according to legislation and policy.

Are there anomalous circumstances and exceptions to this procedure?

Exceptions to the normal procedures in which permits are obtained include issuance of permits to avocational archaeologists in Manitoba. Also, in the past there were cases where archaeologists who had a long history of work in a province were not required to obtain permits, but these exceptions rarely, if ever occur today. Two jurisdictions which encompass large, sparsely populated regions have had several recent cases of foreign archaeologists working in remote locations without notification or permits. These are dealt with on an individual basis. All jurisdictions cope with site destruction through development, erosion and illegal artifact hunting.

How is the institutional repository chosen? Institutional repositories are chosen either by fiat or by arrangement and negotiation. Five jurisdictions require the reposition of collections in a centralized pre-determined location, either through legislation or by policy administered and controlled through the permit process by the government archaeology branch. These are Alberta, Saskatchewan, New Brunswick, Nova Scotia and Newfoundland. In the

distributed networks found in British Columbia, Quebec, Manitoba and Ontario, archaeologists make reposition arrangements with local museums, university museums, or the provincial museum. In Ontario reposition is not required by legislation or policy, and, as is discussed in chapter four, archaeological collections may be curated privately. These arrangements are normally made prior to the issuance of the permit, and the location of the reposited collection is usually on file with the government archaeology branch. Archaeologists producing collections from the two territories must negotiate with the Archaeological Survey of Canada and the territorial government department. Most northern collections excavated in the past two years have stayed in the north. This trend is expected to continue.

Who is responsible for the collections post-excavation/pre-reposition? The ownership of collections prior to excavation is sometimes dealt with in legislation or policy. Alberta, Saskatchewan, Newfoundland and Nova Scotia claim Crown ownership of *in situ*, unexcavated archaeological materials, while Manitoba, British Columbia, Quebec and New Brunswick recognize private ownership by the land owner.

Who is responsible for the collections post-reposition? A permit to excavate never entitles an archaeologist to ownership of the resulting collection under Canadian law. However the responsibilities and liabilities for the collections during the hiatus between excavation and reposition is usually not

covered in legislation or policy. After collections have been recovered from the site, but prior to their reposition they are in the care of the archaeologist and/or analyst. In three jurisdictions, however, the government may require that the collection be turned over to the provincial or territorial institution for inventory and rudimentary cataloguing prior to analysis. In these jurisdictions reduced budgets have promoted an alternative where the repository may require that the archaeologist provide the institution with an inventory and rudimentary catalogue within a defined short period of time. In these cases the institution takes responsibility for the collection as soon as possible after excavation, prior to analysis.

When a collection is transferred to a repository, the repository may or may not become the legal owner of the collection. In jurisdictions where the Crown owns archaeological materials *in situ*, it continues to own it during analysis and after reposition. Such collections are usually reposited in a Crown institution. Collections recovered from private land in Manitoba, British Columbia, Quebec and New Brunswick are technically the property of the landowner. However, the arrangements made as part of the permit process, prior to excavation, normally provide for the transfer of the collection to a repository. Such collections are then 'owned' by the repository, although a formal transfer of title from the landowner to the repository does not take place. These collections are normally considered to be held in the public trust under institutional policy. The only exception mentioned during the interviews was the

collection recovered during excavations at the Jesuit seminary in Quebec City. In this case the collection was returned to the Jesuits for use in their on-site museum.

In most cases the responsibility for the collections after reposition is clear, they are integrated into the collections of the repository and become its responsibility. However, in some cases the excavating archaeologist, or another researcher who has studied the collection develops a proprietary feeling toward the collection. This may be acknowledged by the repository staff long after the repository has taken formal possession of the collection. There have been rare cases, in three jurisdictions, where excavators or previous researchers have been informally included in discussions on future use of the collection, particularly when destructive testing of portions of the collection is proposed, in discussions of the transfer of the collection to another institution or repatriation of the collection to a First Nations museum or individual. In some cases, of course, the excavating archaeologist or researcher may be employed by the repository and included in such discussion as part of their duties.

Questionnaire section 2, determination of the parameters of legislation. Are there written policies which are derived from relevant provincial, territorial or federal heritage legislation? Heritage legislation exists in the Northwest Territories and all provinces except Prince Edward Island. Legislation is under development in Yukon. I obtained copies of legislation from all these

jurisdictions, including proposed amendments or major revisions to existing statutes from British Columbia and Ontario. The revisions to the Ontario legislation are now not expected to proceed, given the change in provincial government.

I contacted 23 institutions, requesting copies of written and formally adopted curation policies. I was able to obtain copies of these policies from seven institutions. People interviewed at four institutions said such policies existed, but were either unable or unwilling to give me a copy. People interviewed at five said the policies were being drafted but were not ready for release.

Are there written procedures manuals which are derived from these policies? Procedures manuals were requested from the same 23 institutions. I was able to obtain copies of procedures manuals from three institutions (Parks Canada, the Canadian Museum of Civilization and the Prince of Wales Northern Heritage Centre). People interviewed at a further three institutions said procedures manuals existed, but were unable or unwilling to provide a copy.

Section 3, archaeological / disciplinary standards of curation. How should a museum care for its archaeological collections? The seven curation policies I obtained all contained details of the expected standards of care for its archaeological collections. While phrased generally in terms of accountability

"as material assets of the public trust" (Canadian Museum of Civilization 1994), they also specified detailed preservation and documentation requirements and procedures. Policies to be followed in the documentation, storage, use and conservation of the collections were outlined.

What are the requirements of a repository? The people interviewed during the summer of 1995 who answered this question, commenting on the manner in which a museum should care for its archaeological collections, emphasized balanced aspects of collections management, preservation and access and added a number of specific requirements for care. The specific areas mentioned are first enumerated and ranked by frequency.

The repository must provide physical security for its collections (21).

The repository must provide separate storage of non-diagnostic materials (19).

The repository must be able to provide research access to the collections (17).

The repository must provide collection access via documentation (17).

The repository must provide computerized collection access (16).

The repository must have a conservation laboratory (12).

The repository must preserve the collections and documentation (4).

The repository must use proper storage materials and supplies (4).

The repository must integrate archaeological collections into an institutional collection management system (2).

The architectural design of the building should promote conservation (2).

The repository must publish and exhibit collections (2).

The repository must be able to locate the collection in storage (1).

The repository must have movable storage (1).

The repository must ensure First Nations are informed and involved in excavation (1).

The organizational structure of the repository should be designed in such as way as to avoid empire building among rival department managers (1).

What kind of building should it have (physical security)? The basic requirements of a repository building were generally agreed as ones which could provide physical security for the collection, although two archaeologists felt this may prove to be a secondary consideration in choosing a repository, rather valuing accessibility for future research. Two other respondents discussed architectural details which aid in the buffering of collection storage facilities from fluctuating external temperature and humidity.

What kind of storage facilities should it have (preventative conservation)? Separate storage of diagnostic and non-diagnostic archaeological materials was discussed as a preventative conservation measure in 19 institutions. Seven repositories stored all their archaeological collections in one room or one building, or at least at one site in the case of a large reconstructed historic site (Fortress Louisbourg). All repositories separated

diagnostic materials from non-diagnostic and all but one stored the non-diagnostic materials in a bulk storage venue, often off-site.

Seventeen repositories arranged at least a portion of the diagnostic collection in drawers or another easily viewed form, while two (provincial government branches of archaeology without associated museums exhibition galleries) did not, preferring to keep all materials integrated into site archives. One small, single site repository stored their entire collection in an easily viewed manner, in drawers and shelves. Access to all diagnostics was often cited as an ideal, but one which was not possible due to fiscal constraints.

What kind of conservation services should it have (remedial conservation)? Twelve respondents cited the need for a conservation laboratory, preferably available on site at the repository. The conservation laboratory should be equipped to handle the kind of collections routinely acquired by the repository, such as a metals laboratory in an institution which curated historic collections. Conservation was emphasized in institutions which curated historic collections, and was of less concern in those institutions which curate prehistoric collections. A conservation laboratory was available at either on site or in close proximity at seven institutions. Four respondents mentioned the need for acid free storage materials.

What kind of collection documentation services should it have? Seventeen respondents described ideal documentation services, giving a goal of an organized and available collection. Sixteen respondents described the need for computerized access to collections with twelve giving detailed tours of the collection documentation system. All systems were compatible with the Canadian Heritage Information Network. One institution cited an ideal of a record for every single artifact or physically separate piece of archaeological materials. While this institution has a remarkably complete catalogue, an estimated 80% of their records referred to batches of artifacts. The gap between this ideal and the reality of catalogue incompleteness is a direct function of lack of funding for the labour intensive activities of cataloguing and data entry.

Two interesting patterns emerged. All repositories that are a direct part of a government agency such as an Archaeology Branch were willing to accept a basic level of collection cataloguing. These agencies' records noted location of the collection either in terms of which repository cared for it, or if the collection had been turned over to a repository. While more extensive cataloguing beyond this very basic level was seen as an ideal, it was not seen as a main focus of the agency's mandate. In contrast, museums wanted access to exhibitable collections, and tailored their collections documentation systems to this end. Diagnostic materials and objects which could easily be displayed

were documented individually in most museums. Site level materials and other bulk, non-exhibitable materials were not catalogued in detail.

What kind of training should staff have? Staff training was not discussed in detail with most respondents. Five respondents replied that the person in charge of archaeological collections should have a degree in archaeology, either at a Bachelor's level, although a Masters is preferred. Most respondents replied that conservation and registration staff should have a degree at the Bachelor's level or be the graduate of a recognized college programme, although a higher degree was preferred. The exceptions were all conservators who had been associated with the Master's programme in Conservation at Queen's University.

Section 4, survey of curation practices, acquisition guidelines and standards. Are there written guidelines or standards for the acquisition of incoming collections? Sixteen institutions were surveyed for collection curation practices. These were the Archaeological Survey of Canada at the Canadian Museum of Civilization, the Manitoba Museum of Man and Nature, the McCord Museum, the Municipal Department responsible for archaeology for Quebec City, the Nova Scotia Museum, Parks Canada in Winnipeg, Ottawa and Fortress Louisbourg, the Prince of Wales Northern Heritage Centre, the Provincial government repositories for Ontario (at Thunder Bay), New Brunswick, and Manitoba, the Royal Ontario Museum, Sainte Marie Among the Hurons, the

Vancouver Museum and the Woodlands Cultural Centre. There were written guidelines for the acquisition of incoming collections in all but five institutions. Of the five exceptions, guidelines are being written in one.

Does the institution accept any collections offered? If not, what are the criteria by which you judge acceptance or rejection? In twelve repositories, the collecting mandate was defined as all archaeological material from a specific geographic region. This region might be as large an area as the province of Ontario, limited to a city as in the cases of Quebec City and Vancouver, or strictly limited to materials arising from the site upon which the repository was located, as in Fortress Louisbourg and Sainte Marie Among the Hurons. Normally the excavating archaeologist made the decisions on which material to include in the archive. The curator or person responsible for incoming collections did not cull the collections, but accepted and curated whatever was offered. In one repository (the Nova Scotia Museum) the collections were routinely vetted, with the curator returning all non-artifact samples and most level material to the archaeologist.

All institutions would reject collections under certain circumstances. Acquisition of collections was seen as the assumption of a burden. This burden was considered in terms of the financial commitment the institution was making and in terms of the legal and fiduciary obligations the collection brought with it. The most common (13/16) reason for rejection of a collection was geographic

location. If the mandate of the institution was limited to a defined region, all collections outside that region were usually rejected. Exceptions were made when a collection from outside the region had an association with the region, or would complement existing collections in some tangible and justifiable manner. Such exceptions were described for six repositories. It should be noted that all government run institutions cited geographic location as a reason for rejection of a collection. The quality of the collection offered was listed as a reason for rejection by four institutions, with space constraints mentioned by another four.

Are there written curation standards? If so, who is responsible for their application? Are there regular audits? If so, what are the audit procedures? Written curation standards were produced in six institutions, four of which were the federal institutions. In all cases, responsibility for their application rested with the head of collections, the curator or other person in ultimate charge of the collection. Regular audits were regularly performed only in the four federal institutions, where they were carried out by the Office of the Auditor General. Only one provincial or territorial institution had been audited by the provincial or territorial auditor. Audit procedures consisted primarily of a review of financial procedures, ensuring budgets were spent in accordance with estimates. A portion of the audit, however, included an exercise of locating objects within the collection. Beyond this basic accountability, there does not appear to be a regular audit of curation procedures that includes an assessment of the documentation standards or the measures taken to preserve the collections.

Does the registration system used for archaeological collections allow for the multiple and collective nature of archaeological collections, or is it a forced adaptation of a system designed to deal with other types of data? Three institutions have numbering systems that can not accommodate collective numbering, while all others can. In these three institutions, each object is either numbered separately or not numbered at all. The unnumbered portions of the collections tend to be the flakes, chipping detritus and unidentifiable bone fragments which are bagged and registered in groups. Of the institutions which have numbering systems which can accommodate collective numbering, one institution standardized the size of the groupings to batches of 1,000 and the remainder. All others standardized the batching process to group all like objects from a unit and level, for example, grouping all chert scrapers from a unit and level, or all basalt chipping detritus from a unit and level. Six of the institutions only curated archaeological materials, and so did not have a separate system for non-archaeological collections. Of those institutions which curated multi-disciplinary collections, eight had a separate numbering system for archaeological collections, while two incorporated archaeological collections into the general numbering system. The most common numbering systems specifically designed for use with archaeological collections were the Borden system (Borden, 1952) and the Parks Canada system. All systems allow for multiple pointers to different types of collections such as artifacts, level material, column samples, faunal samples, floral samples and radiometric samples.

Are there 'special artifacts' registered differently from the system used for other archaeological collections? When I asked about treatment of 'special artifacts' during an interview, only two respondents agreed that they treated certain portions of the collections in a manner different from other collections. All others indicated that all collections were treated equally, and held to this position after an explanation of the question, specifically mentioning large objects, fragile objects, human remains and sacred materials. The democratic treatment of all objects in the same manner was held to be an ideal. The two institutions that did differentiate between the majority of their collections and any 'special cases' did so for human remains and any objects recognized as sacred by First Nations.

However, when I examined the storage conditions and documentation of the collections, I found the collections were in fact treated differentially in all institutions. Human remains were returned and reburied in most cases. Where they were retained by the repository, they were segregated from the rest of the collection both physically and in the documentation. Objects requiring special storage conditions, such as frozen materials, large objects or very fragile materials were treated separately. Objects deemed special for historical reasons, such as those objects associated with important individuals and events were treated with more care. This was particularly the case for documents, such as those recovered from arctic cairns or a historic site. Most importantly, the

vast majority of archaeological materials were treated in bulk, and treated as batches of collections in both physical storage and their documentation.

Can the entire documentation on the site be reassembled and reconstituted? What safeguards are built into the system to ensure this? Can all documentation be found? Is there an inventory which lists which sites have (for example) aerial photographs, such that one can know if all documentation has been located or not? Similarly, the ability to reassemble and reconstitute the entire site archive was seen as an ideal, as a primary goal of collection curation in all but two institutions. The goal could be accomplished in two ways. The simplest would be for the repository to include a summary of all artifact collections, samples, photographs, catalogues, *et cetera*, in a main file. This would serve as a checklist for future researchers. One repository, a provincial government archaeology branch, maintains a summary of all collections in the permit file. Unfortunately, this list is not updated as future research and publication is done on the collection. The more research-intensive alternative method is the extensive cross-referencing of all collections held outside the main storage area and all documentation held separate from the main files. One repository, the Archaeological Survey of Canada at the Canadian Museum of Civilation, maintains an extensive cross-referencing system with the reconstitution of the site archive as a goal. All staff interviewed at this institution (ten individuals) claimed that, with diligence, a site archive could be reconstituted, despite the fact that portions of the archive could be located in

seven separate locations. Testing this claim would be difficult. One might never know if a portion of the archive such as aerial photos of the site was missing. All other repositories recognized this as a meritorious goal, but one they did not attempt to achieve.

Is it possible to find a 'type specimen', for example for publication, easily? Logically, it should be possible to find a 'type specimen' by going through a computer search of documentation. This proved to be a time and labour intensive process as no computer system in use in the repositories permits the inclusion of a qualitative, subjective measure such as a flag for 'type specimen'. In order to find a publishable example of a specific artifact type through use of the documentation system only, one would have to search the records noting all examples, physically locate all examples or photographs of the artifacts, examine them and make a judgment. In order to accommodate this common request, six institutions have created a separate storage location for 'type specimens', using the same artifact examples to answer repeated requests. While this reduces staff time in answering requests, it also has the effect of reducing the range of variability in published artifacts.

Does the repository actively support research? Has the repository sponsored archaeological research either survey or excavation, staff or contract or is the repository collecting passively - taking whatever offered from contractors? Thirteen institutions have sponsored survey or excavation, either

through staff (13) or contract (10). All ten repositories that use contractors acquire whatever is offered by the contractors, not requiring contractors to comply with a pre-determined collection strategy. Ten of the repositories have an active programme with an articulated research strategy.

Are non-artifact collections deaccessioned or kept? Non-artifact collections were interpreted in two ways in responses to this question. One repository, the Nova Scotia Museum, routinely disposed of all non-artifactual materials such as soil and sediment samples, charcoal samples, and all unworked bone. The radiometric samples and other non-artifactual materials were considered research materials. Their presence only indicated the researcher was not finished with the collection and the collection was not properly prepared for reposition. Accordingly, the samples and non-artifactual materials would be returned to the archaeologist. One repository, the Manitoba Museum of Man and Nature, only deaccessioned materials which clearly had nothing to do with the archaeology, such as a tennis ball or coffee cup found in a box of incoming materials. All other institutions disregarded such items during accessioning, obviating the need for subsequent deaccessioning. All institutions deaccessioned archaeological materials only as a last resort in the face of extreme budget and storage conditions. All these preferred to place the non-artifact collections in less than ideal storage condition to reduce costs rather than to dispose of the collection. While this placed the non-artifact collections at greater risk, it was seen as preferable to complete loss of the information.

How are archaeological collections used? - research and publication, exhibits, public programming, maintenance of reference files of archaeological research done at a specific site, storage of collections, photographs of excavation and field research as well as artifacts, *etc.*. Of the eighteen institutions surveyed, the collections were used in the following ways: research (18) publication (16), in house exhibits (12), lending to external agencies for exhibition (18), public programming (15), maintenance of reference files of archaeological research done at a specific site (13), storage of collections (18), photographs of excavation and field research (15) and storage of artifacts(17).

As a final check, I attempted to locate a specific collection as a test of the collection location system. I tried to find both an unusual collection, such as a physically sensitive collection and a more common collection, for example a lithic collection. I was able to test the collection location system in fourteen institutions. I selected a collection at random from the documentation, and tried to find it in the collection storage area. I limited myself to finding the collection within one hour of active searching, after arriving at the location indicated in the documentation. I was successful in finding at least a portion of the collection in seven repositories. I was successful in finding portions of physically sensitive collections in seven repositories and in finding portions of lithic collections in five repositories.

In this chapter I propose guidelines for archaeological curation. The guidelines are listed under the four headings: the characteristics of a repository; curation practices which should be found in a repository; the areas of professional judgment which must be exercised; and professional relationships which will promote the preservation of useable collections. Each of these areas are discussed below.

I   Characteristics of the repository

1.   House the collection in a facility which is designed and purpose built to provide adequate curation for archaeological collections.

2.   Properly trained staff in appropriate specialties should control curation policy and practice.

3.   The repository should have a series of policies which are derived from legislation and the institutional mandate which are adequate to give clear policy direction to staff. The repository should have a clearly defined mandate outlining the areas and levels of responsibility which are to be undertaken.

4. Archaeological curation should be integrated into other archaeological functions within the structure of the organization. The bureaucratic structure of the repository places archaeological curation such that it is considered a valued function.

5. The repository should have adequate funding to fulfill the mandate.

1. House the collection in a facility which is designed and purpose built to provide adequate curation for archaeological collections.

The physical plant in which reposited collections are housed has an undeniable influence on the long term preservation of the collections. On one hand, there is a natural inclination for administrators to house heritage collections in heritage buildings. This simplifies bureaucracy through the consolidation of administrative structures of both collections and the buildings. Superficially, it is sometimes thought that the recycling of older buildings into museums and collections storage will result in financial savings. Some imposing buildings of civic significance, such as large downtown bank head offices, with their classic architecture, safes and vaults may appear to meet criteria of physical stability and security. However, the security systems and standards of the turn of the last century are not the same as the standards of museum or repository security required at the turn of this century.

Examination of situations where banks or historic houses have been renovated to provide storage for archaeological materials shows these facilities to be generally inadequate. In many cases security systems are not upgraded from those in use during the original use of the building. Heritage buildings are maintained in their period appearance, limiting the installation of obtrusive security measures such as window bars or intrusion alarms. Safety measures, such as fire detection and suppression systems are often not installed due to financial restraint.

Museum architectural design is a large field, particularly in the area of climate control. The challenge of maintaining a stable relative humidity and temperature conducive to the preservation of collections is daunting even in temperate zones. In northern climates, this challenge calls for innovative solutions. With the construction of the Dawson City Museum in Yukon, the Prince of Wales Northern Heritage Centre in Yellowknife, and the Canadian Museum of Civilization in Hull (MacDonald and Alsford 1989, Alsford and Alsford 1990), many of these concepts have been adapted to meet Canadian environmental and climatic considerations (Gates 1990). Museum collections are ideally stored at 50% relative humidity and 20 degrees Centigrade, with several exceptions for certain materials, such as corroding iron or photographic film. More important than exact adherence to the standard is the limitation of fluctuations from this standard. One concept developed in 1979 during the

construction of the Prince of Wales Northern Heritage Centre was the collection storage and exhibition areas as structurally separated by vapour barriers and membrane envelopes, buffering the effects of the harsh winter climate. This buffering has also been used in the construction of the Canadian Museum of Civilization, where collection storage is protected by a building within a building Here the storage facilities are literally a series of rooms buffered by an envelope of rooms with other uses, such as offices, along all outside walls.

Archaeological collections are typically densely stored and very heavy. Considerations of floor loading and ease of movement of large heavy objects are essential during design. Double high doors, ramps and wide hallways are needed to accommodate truck lifts, carts and dollies. A proper loading bay with a platform is needed for vehicle access.

Space near the loading bay should be allocated to the assessment of incoming collections, which may then go either to conservation, cataloguing or storage. Incoming collections may then be checked for evidence of infestation in a contained area prior to their incorporation into collections storage rooms. A separate layout room for researchers should be provided near the primary storage area.

2. Properly trained staff in appropriate specialties should control curation policy and practice.

The curation of archaeological collections involves three specialized areas - collections management, conservation and archival management. Post-secondary training programmes in each of these areas are now available in Canada. The growing professionalization of these areas must be recognized, and appropriately trained staff hired. Employment of those with lesser qualifications is a short sighted fiscal saving, as the damage suffered by collections at their hands is often irreparable.

Collection care is principally the responsibility of staff members (regardless of job titles) directly involved with collections. Curators, collection managers, curatorial assistants, conservators, registrars, preparators, and technical assistants all handle collections and make operational and policy decisions regarding collection's conditions and care. Many collections care activities do not require professional conservators for implementation (Duckworth et al., 1993), but an awareness of conservation issues should be a part of the normal course of activities in all departments which deal directly with objects. Other departments (e.g., education and exhibition) may often be responsible for the care of reposited objects that are used for education or exhibition purposes. Preventive conservation is the responsibility of all staff

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including, for example, building and grounds staff, security, and those responsible for receptions and development functions.

Staff should have appropriate training to understand fully all aspects of curation (e.g., legal, ethical, environmental conditions, management, security, health and safety), the limitations of their own expertise and authority, and the consequences of any decisions and/or actions they may take or recommend. Every effort must be made to consult with appropriate specialists to ensure that all aspects of management, preservation, and use are considered before authorization for actions is given.

There should be a cooperative dialogue among archaeologists, curators, collection managers, registrars, conservators, and collection users concerning all aspects of collection curation. If only one individual is responsible for all collection care activities, every effort should be made to build a network of associates and consultants to broaden the base of available expertise.

Collections management is the orderly control of the materials. Proper collections management provides access without endangering the collection's integrity. For example, cataloging should not be done by those with the least training. The recognition and identification of artifacts is critical to further analysis and collections management. A high level of accuracy is essential and must be maintained over a long period of time.

Collection management is the responsibility of individuals trained in archaeological and museum philosophy, theory and practices, including those processes defined within these guidelines: collection, preparation, sampling, preventive conservation, maintenance, and documentation. Responsible staff should have training in archaeology but may not necessarily be specialists.

Conservation is the responsibility of trained conservators. Conservation and preservation personnel should have appropriate training and experience to undertake conservation and preservation procedures. Conservators should meet professional training requirements and should adhere to professional ethics and guidelines such as those defined by International Institute for Conservation-Canadian Group and Canadian Association of Professional Conservators (1989) and American Institute for Conservation (1985, 1993).

A trained conservator should be available for consultation. If the collection warrants, a full-time conservation staff and laboratory may be necessary. Historic sites, for example, often produced large quantities of ferrous materials which require bulk treatments. A collection composed primarily of stable ceramics and lithics may only require occasional advice.

3.   **The repository will have a series of policies which are derived from legislation and the institutional mandate which is adequate to give clear**

policy direction to staff. The repository will have a clearly defined mandate outlining the areas and levels of responsibility which are to be undertaken.

A repository has the ethical and legal responsibility to ensure that collections in its custody are protected, secure, unencumbered, cared for, and preserved. Any institution holding collections of value to the archaeological community has an obligation to endorse this code. To fulfill this responsibility, it is essential that institutions take steps to avoid the use of scientifically unsound treatment techniques, poor environmental conditions, and negligent handling in order to protect the physical and chemical integrity of archaeological materials for present and future needs.

Each institution should establish priorities for the management and care of the institution's collections as a whole, in addition to setting priorities for the care and treatment of individual materials of particular research, historical, aesthetic, or educational value. Values of individual artifacts differ, and resources are generally limited, resulting in the need to priorize management and care activities. Only by having a clear overall management policy can curators set priorities and make the best use of limited resources (Stansfield 1985). This can be accomplished through a risk management approach. With this approach, the magnitudes of risks from all sources, as they affect each collection, are considered together. Limited resources can then be targeted to

the mitigation of risks to effect the greatest possible reduction in overall rate of damage to the institution's collections.

Guidelines for professional management and care should be applied not only to research collections, but also to education and exhibition collections. Institutions should implement systems that ensure preservation of both documentation and collections.

Without a legislative base, it is difficult to take an aggressive position in either archaeological resource management or the curation of collections. As discussed above, some provincial jurisdictions have stated Crown ownership of archaeological resources, while others vest title in a landowner or finder. The difference may be seen between those offices which force compliance and those which urge co-operation.

There should be a clear and unambiguous logical argument running from legislation through policy to procedures. These should be clearly and simply written, and accessible to staff. Procedures documenting methodology should be available to new staff and contract personnel, ensuring continuity.

Many museums have recently re-written their mandates, focusing on smaller goals. For example, the Vancouver Museum is in the process of limiting its collecting area to the city boundaries of Vancouver (Wood, 1995 pers.

comm.). In the mid 1980's the New Brunswick Museum limited its mandate to the natural and cultural history of the province (Tolmatch, 1990a).

This appears to be a preliminary step to the 'rationalization' of the collections. If the collecting area is limited in geographic or temporal scope, those portions of the collection which now fall outside the newly defined mandate may, with justification, be deaccessioned. This cost-saving downsizing of the collection will impact available storage space and associated costs, and may result in staff reductions.

These 'rationalizations' of the collection are often disguised as good management practices. However, a large number of issues must be addressed. The repository has received archaeological collections which were excavated or collected through the expenditure of public funds and under permit. The repository has a fiduciary responsibility to the public for the care and maintenance of these collections. In the same manner in which museums hesitate to deaccession gifts from prominent donors, so repositories should only undertake disposal of archaeological materials after serious consideration of alternatives. In addition, as discussed above, if a collection is not curated to a professional standard, the scientific value of the original archaeology may be suspect. In the absence of the same site to excavate again, subsequent researchers must rely on reports, documentation and collections. If these no longer exist, the original research may easily be challenged.

Further, the disposal of collections of First Nations archaeological material may be challenged by First Nations. If such collections are to be deaccessioned by a repository, a First Nation may challenge a transfer to another repository, preferring that the material be transferred to First Nations' control. In several recent cases, archaeological and ethnographic materials made redundant through the redefinition of a mandate have been turned over to a First Nations organization. When the federal Department of Indian and Northern Affairs was downsized in the late 1980's the collection of Inuit materials held by the department was deaccessioned. The initial proposal presented by Indian and Northern Affairs involved transfer to the Canadian Museum of Civilization, the National Art Gallery and the Winnipeg Art Gallery. The resulting protest from the north was appeased by including both the Inuit Cultural Institute and Avataq as recipient agencies (Craig and Smith, 1990).

4. Archaeological curation should be integrated into other archaeological functions within the structure of the organization. The organizational structure of the repository places archaeological curation in a position such that it is considered a valued function.

In a climate of fiscal downsizing, it is important to ensure that collections are valued. The curation of archaeological collections is an expensive undertaking. Non-archaeological administrators often do not appreciate the

value or significance of archaeological materials. Often not visually appealing, and often the butt of humour, archaeological collections need the active support of their constituents - repository staff, archaeologists, First Nations and historical associations. If collections and curation are marginalized within the structure of the institution, support will diminish. It is important that both storage and documentation are integrated into all curatorial work, and not neglected (Lord, *et.al.* 1989)

One effective way to protect collections is to demonstrate their utility. Crown funded collections of art, historical items or even postage stamps find a high profile use in exhibitions. While some archaeological collections are visually exciting and form the basis of blockbuster exhibitions which travel the world, most Canadian archaeological material has little exhibition potential. Given this, those who wish to protect curated collections must demonstrate their value. This may be done through publication of illustrations of specific artifacts and visits to repositories to examine collections. Museum administrators track research use of various collections. When forced to choose between a high profile, well used historical collection and a site archive which has not been retrieved from off-site storage in a dozen years, an administrator will not hesitate. The archaeological community will need a watch-dog to alert it to endangered collections.

5.   The repository will have adequate funding to fulfill the mandate.

Budgets devoted to archaeological curation must be defended within the context of the larger bureaucracy. All repositories are part of a larger institution, a museum, a government department or a university. Bureaucrats generally prefer to fund areas with high public profiles. Where a museum shares a ministry or government department with public safety or education, archaeological curation, may be a low priority and receive reduced support.

With a clearly defined mandate arising from a legislative base, and written procedural guidelines for the curation of a collection which has been integrated into the primary goals of the larger institution, archaeological curation becomes much easier to support.

It is essential that each institution provide the resources (*e.g.*, time, money, qualified personnel, appropriate space, and facilities) needed for the long-term preservation and documentation of the collections under its responsibility, or make alternative arrangements for collection management and care with an appropriate allied institution. The repository must have a funding level adequate to supply the staff expertise as well as the physical plant and operations and supplies budget which is required by professional curation of the material. This level of funding should be stable and predictable. If these funds

are no longer available in appropriation grants, ongoing operations budgets or endowments, they must be sought elsewhere.

While the promotion of the preservation of collections is in the interest of research archaeology, it may be perceived as in the best interest of museums or governments. Funding for proper curation is rarely built into institutional budgets. Funding for curatorial activities in a period of fiscal restraint may be found in three areas, ongoing curation fees, one time reposition fees and funds acquired through deaccession activities. Many repositories in the United States now charge a curation fee. For example, the Utah Museums Association charges a one time fee for collections curation, payable upon reposition. Charging these fees is a short term solution aimed at alleviating budget shortfalls, but charging fees increases the legal responsibility of the repository to maintain collections and their associated data in good condition and excellent order, and to ensure they are available for future research (Hannibal and Twoomey, 1986). Discussion around annual on-going curation fees is beginning at the University of Arkansas (Lela Donat, 1995, pers. comm.).

These measures simply shift the burden of the cost of ongoing curation from the repository to the archaeologists, or possibly to the developer or other agency that contracted the archaeologist. With funding becoming scarcer and the grants process becoming more competitive, the inclusion of curation fees in

initial research proposals will cause inflated project costs, and will result in the funding of fewer projects.

Another common suggestion aimed at alleviating both storage overcrowding and funding shortfalls is to sell parts of the collection. Any funds raised in this manner could be used to curate the remainder of the collection. This has raised a storm of controversy, given the implications in terms of public and donor relations and the fiduciary responsibilities of museums and repositories. However, it has recently been done at the Glenbow Museum as part of an overall re-organization (Janes 1995). In November 1995, Revenue Canada Taxation ruled that deaccessioning of publicly held collections is permissible, with the condition that all funds acquired in this manner will be applied to the ongoing curation costs of the remaining collections (McAvity, 1995, pers. comm.).

An alternative solution is being tried in Ontario, where archaeologists are not required to reposit collections. As is more fully discussed below, this results in a confusing patchwork where collections from one site may be curated in several institutions or kept by the excavator.

II   Curation Procedures

1.   The repository should have a procedures manual that clearly defines current collections management processes in detail.

2.   Keep collections from one site together.

3.   Collections should be stored in an organized fashion.

4.   Use reserve collection space in an efficient manner.

5.   All documentation must be stored in an organized fashion, if possible all documentation on one site should be stored in one place, preferably near the collection itself.

6.   A master list of all materials must be kept in a main file.

7.   Professional conservation standards must be met in both storage and treatment of collections and their documentation.

1.   The repository should have a procedures manual which clearly define current collections management processes in detail.

Archaeological curation is ideally governed by clearly articulated collections policies which detail the activities and procedures to be employed on managing collections.   They typically cover transfer of title, acquisition or accessioning, registration and documentation, preventative and remedial conservation, storage standards, use of the collections in loans, exhibitions,

research and the like, and possibly disposal or deaccessioning. These may be used for the guidance of staff and contractors. Procedures should be written by the curator or collections manager and reviewed by at least one archaeologist with a professional relationship with the repository. The review should ensure the recommended procedures will not compromise the integrity of the archive as an archaeological resource for further study. The archaeologist may recommend new procedures which will assist in the preservation of the site archive.

2. Keep collections from one site together.

The potential for re-analysis of a reposited collection may depend upon the availability of the entire collection. If a collection from a single site is divided among several repositories future re-examination of the collections will be made more difficult. The collection may require loans, shipping or unnecessary travel, all possibly damaging to the collection and a greater risk of loss or damage.

Therefore, to facilitate future research the entire collection from a single site should be reposited in a single institution. There are many sites which have been re-examined and/or re-excavated. If the first investigator has an institutional affiliation with a particular museum or university repository, one would expect to find the collection reposited with that institution, unless provincial law directed the collection to a centralized repository. Often the

archaeologist undertaking subsequent investigation is affiliated with a different research institution. In such cases, should the collection arising from the work of the second researcher be reposited with the first collection? Should the collections arising from the first investigations be deaccessioned by the repository and permanently transferred to one affiliated with the second archaeologist? This may facilitate research. In some cases, collections from one site have been split between the two institutions, hampering research. This should be avoided wherever possible.

There is some argument for the reposition of collections from a region in one institution. While this may be desirable, it is not likely to be implemented by any Canadian jurisdiction in the near future. The cost of the transfer in staff time, paperwork, packing and shipping collections is not justified by the benefit to be gained in ease of research.

One curator expressed a counter opinion. He felt that many collections would benefit from distribution among several institutions. This, in his opinion, would provide a 'backup' or 'security copy' of the collections. In the event of a disaster, if the collection housed in one location were destroyed by fire, flood, earthquake, *et cetera*, the entire record from a site would not be lost. With fiscal restraint and cuts in curation budgets, security systems which would prevent catastrophic loss of collections are being jeopardized. Fire retardant systems in collections rooms are usually the basic, minimum level required by the building

code, not upgraded systems designed to protect fragile organic collections. The collection reposited in another institution may be critically important in a disaster situation, providing an off-site, backup collection. This collection would not be a copy of the lost collection, but may be better than loss of the complete collection.

Some argument may be made for the curation of different components of a site in different institutions. A prehistoric component of a site found in the lower levels of a major historic site, would receive little attention in an institution primarily focused on the interpretation of historic fortifications. Similarly, a small collection of ferrous materials from a historic component of a large prehistoric site should not be reposited in an institution which does not have conservation facilities designed to process iron materials.

A far more commonly held view is that collections should be kept together. The concept of a security copy was usually covered by information systems - from photography and paper records to CD-ROM images and the Internet.

Another threat to the principle of repositing collections together is a perception of national significance. There is an area of conflict where objects are considered nationally or internationally significant. In the past, large museums in metropolitan centres have claimed the important items, leaving the

local museum to curate the rest of the collection (Schadla-Hall 1987). With the development of professional conservation and curatorial standards in provincial and regional repositories, significant objects are generally retained with the bulk of the collection which forms their context.

This situation is more complicated in countries with a large indigenous population such as Canada. Here First Nations object to the removal of significant objects from their territory or region. This is particularly the case in more isolated regions such as the Northwest Territories and Yukon. In addition, given the current fiscal situation, a repository located closer to its constituents may receive greater public support than a repository at the national level. For example, when the article by Schadla-Hall was written the Canadian Museum of Civilization (CMC) was experiencing major cuts in funding while the Prince of Wales Northern Heritage Centre (PWNHC), while not expanding, had relatively stable curatorial funding. Both institutions have had budgets cut subsequently, yet, while the CMC has disbanded its archaeological conservation unit and returned archaeological cataloguing to research staff, the PWNHC retains the level of conservation and documentation services it had in 1987. Consequently, this local, isolated repository is now better able to curate significant archaeological objects and collections than the national institution.

3. Collections should be stored in an organized fashion.

Before the organization of the collection within a repository is discussed, it is necessary to point out the need for an organized approach to national curation. If the reposited archaeological collections from all sites in Canada are considered as a whole, their curation may be structured logically. A "good fit" between the repository and the collection has two conditions. The first condition is the logic of the choice of the repository. While some provinces required reposition in a centralized repository, in provinces using a distributed network a researcher has a choice of more than one repository which may be approached. The choice of the repository should seem logical to a subsequent researcher searching for the collection, for example because of an historic link between the collector and the institution. Other acceptable choices may be the local museum nearest the site (if it commands the requisite resources) or the repository which already curates a significant portion of the site archive. This will assist subsequent researchers in locating the collection for re-analysis.

The second condition follows the first. The logical choice must be capable of curating the collection. It must have the resources to curate the collection, must be able to handle the volume of materials recovered from the site and must be able to meet the documentation and conservation needs of the collection. As discussed above, the collection should fit within the mandate of the repository, and should not be marginalized within the institution. With the

collection valued as an integral part of the function and mandate of the repository the repository has a better long term ability to make the collection available to outside researchers.

The collections must be stored in an organized fashion, preferably organized by the principle investigator or one who understands the research strategy under which the collection was gathered. This will facilitate a subsequent researcher's understanding of the initial investigation. This issue is dealt with in the next section.

Within a repository, if possible, the collection should be stored intact. Some collections managers place incoming boxes of artifacts wherever there is shelf room. Thus, a collection from a single site may be spread throughout many shelves in a large warehouse, or housed in several separate buildings some distance apart. In order to facilitate location and identification of the entire collection by future researchers, the collections should be stored in a logical manner, with materials from a single site stored on adjacent shelving units.

An excellent updated location tracking system will keep discontinuous collections in order on paper. However, keeping such a system accurate and up to date may be difficult in a period of fiscal restraint or staff change. Organized storage in conjunction with a good location system is a better alternative to the memory of a collections manager.

Obviously, some other factors, such as conservation come into play. A mixed collection may require different relative humidity, temperature or light conditions. Some portions of the collection may require long term storage in freezers or desiccation rooms. In these cases careful attention to location systems is essential.

In order for location tracking systems to work, each artifact, sample or discrete lot of material must be given a unique number. Within Canadian repositories two numbering systems are used, the Borden system (Borden, 1952) and the operation and lot system developed by Parks Canada (Parks Canada n.d.) In terms of collections management, both systems work well - the only requirement is that each trackable item must have a unique identifier.

One inconsistency between repositories is the level to which materials are numbered. Some number each and every artifact, flake and chip of detritus. Some never individually number anything, preferring to record in batches. Most repositories will individually number those items which are used as individual objects - the displayable material, the artifacts published in handbooks and site reports, the individual pieces lent for programming and the like. The rest of the site archive is usually batched and numbered in lots. This is a reasonable compromise between the need for collection control at the artifact and individual item level and the need to cut cataloguing and processing labour costs. Some

have suggested that cataloguing to the individual level would facilitate a processual analysis of the attributes of the collection. Others regard this as analysis, and not the responsibility of the collection manager. Few researchers would trust the classification, cataloguing or even the measurements taken by a cataloguer, preferring to do this themselves to ensure accuracy.

One major repository claims to have catalogued each artifact to the individual level with a high degree of accuracy. Two problems emerged when I worked with this system. The first involved the definition of an artifact. While some types of artifacts, such as projectile points were indeed fully catalogued and individually numbered, with extensive catalogue records on the computer system, many types of artifacts, such as scrapers were lumped into lots. Secondly, while the information system was felt to be capable of providing detailed information on artifact distributions, it in fact had never been used to that end. In addition, the degree to which groups of artifacts are lumped is directly related to funding for catalogue positions. As staff are lost, cataloguing standards change, making the comparison from material processed during one year to that processed a decade later meaningless.

Some artifacts are in greater demand due to their use in educational functions. Archaeologists often use artifacts in teaching. These artifacts may be separated from the site archive for long periods of time and may suffer from breakage or loss during handling, laboratory exercises and projects. Artifacts

may be used in museum exhibits, photography, publications or public programming. After such use, the artifact must be re-integrated into the collection storage scheme immediately. If possible, casts or replicas should be used in teaching or public programming. Longer term use, such as permanent exhibits, must leave a clear paper trail such that the missing artifacts *etc.* may be found by the subsequent researcher. This is critically important because those objects most often removed for exhibition or other purposes are often the most significant. They may be the one critical piece of information which defined the original interpretation of the site, and as such are very important in re-analysis.

Every effort must be made to minimize the level of risk facing materials as a result of storage and use (e.g., by using appropriate storage units, providing adequate security, careful screening of on-site users and borrowers, and employing conservation standards for methods and materials used in packing and shipping).

4.   Use reserve collection space in an efficient manner.

Reserve collection storage areas are often very crowded places. Collections research and reanalysis requires the use of layout space near the collection storage, preferably in the collection room. These layout tables are

sometimes seen as a 'waste of space' by administrators who seek to store as much of the collection in as small a space as possible.

Some archaeological collections are very large, numbering in the tens of thousands of pieces, occasionally more. Curation practices designed to deal with smaller collections must be amended to adequately deal with such large quantities of material. To many administrators, valuable high quality, expensive storage space cannot be justified for large numbers of non-diagnostic artifacts, particularly if they appear to be very similar or duplicative to the untrained eye.

Many collections managers have sought to make their reserve collections more efficient through the strategic classification of materials. Those which have a high potential for research, exhibition or other use are often removed from the site boxes and stored separately. The benefits and dangers of this practice bear examination.

Most repositories divide their archaeological collections into two groups, diagnostic or formed artifacts such as recognizable points, and bulk or non-diagnostic materials such as unmodified flakes. Inevitably, with growing collections and shrinking space, curators have removed the non-diagnostic materials from the high quality storage areas, and put them in less expensive storage.

Commonly then, diagnostic artifacts are removed from the site archive, and stored as individual artifacts. Numbered and catalogued individually, and stored laid out in trays in cabinets for easy access. The cabinets are located in high use areas of the collection storage rooms, those areas which have better security and easier access by researchers.

Non-diagnostic materials are boxed, often in level bags, but occasionally re-bagged, and stored in less costly facilities. One museum stores its diagnostic artifacts in individual plastic bags, numbered and identified with both a card and computer record, in cabinets arranged by geographic region. These receive heavy use by exhibition preparators and researchers. The museum stores non-diagnostic materials in a mechanical room located under an underground parking lot. Access is via several sets of stairs and air handling tunnels with low ceilings. Boxes must be moved individually. The salt leaching through the concrete ceiling from the parking area above has formed stalactites. Collections staff are careful to position shelving and boxes away from the major drips, but some damage is inevitable. in another case, a government ministry office stores its most valuable diagnostic artifacts in a vault within the ministry offices located in a renovated bank. Non-diagnostic materials are stored in the basement of a building nearby where they are vulnerable to flooding.

Several museums and universities store non-diagnostic materials away from the main museum or campus. These storage areas are generally some distance

away, and were not monitored on a frequent basis. The artifacts and level materials may be stored in unheated buildings, often in outbuildings at an interpreted historic site or possibly a remote research facility. In these outlying facilities the normal security may be limited to a perimeter fence. Inevitably the collections stored in such locations deteriorate through normal processes. Such collections are at risk from occasional local accidents such as floods, and have an increased risk of damage due to vandalism.

A more drastic form of off site storage involves the reburial of collections. In this scheme redundant artifact collections are labeled, sealed in permanent containers and buried, often on the grounds of the repository. Detailed records are kept, ensuring the potential retrieval of collections so reburied. They may be placed in a gravel or cinder block lined crypt, with a surface marker. While there is much anecdotal rumour of these practices in other countries, as far as I was able to determine (with the exception of human remains), no repository in Canada has reburied collections in this manner. Human remains are normally reburied in conjunction with the appropriate First Nation or other ethnic or religious group. While the reburial of human remains has become standard practice, the reburial of site archives or partial site archives is being resisted by curators and archaeologists alike.

The division of a site archive into diagnostic and non-diagnostic materials with different storage procedures, handling and documentation levels has

advantages and disadvantages. Repositories have employed on-site and off-site storage for a sufficient period of time for these to be identified.

Advantages

When off-site storage is used for bulk materials, the amount of material stored in the repository storage area is dramatically reduced. With a limited selection of materials presented, a researcher may get an overview of the collections from a site or region quickly and easily by going through only the diagnostic materials. As space in the storage area is more available, artifacts are more likely to be laid out in trays or drawers. Artifacts laid out in drawers are visually accessible. Where non-diagnostics and diagnostic materials are included in one storage location, it is common to find them all in boxes, or all in bags with cards in trays, with thousands of artifacts per tray. Under these conditions it is difficult to access and visually assess the collections.

The division of collections into diagnostic and non-diagnostic is fiscally more responsible. this management strategy expends a greater proportion of finances in areas where the potential for return is greater. In this storage configuration collections managers spend resources where they can be justified in terms of public and research use. Fewer dollars are spent on collections stored in remote locations. Collections stored in bulk at remote locations are rumoured to be visited or used for research purposes at most once a decade.

Disadvantages

A researcher re-examining a site needs to study all materials and documentation, not just the materials which were initially judged to be significant. By separating the collection into more valued and less valued portions, the collections manager may be separating an artifact from its context. Unless careful curation practices which maintain connections with the contextual data and collections are followed, this may be the final step in the removal of the artifact from its context. Once an artifact is isolated in better quality storage or in an exhibit, it may never be re-integrated into its site archive.

By making what can be interpreted as a value judgment, curators may be exposing the bulk collections to a risk of deaccessioning by administrative personnel who do not have an appreciation for the importance of the materials. Bulk materials usually get less quality preventative conservation. They may be kept in level bags, or stored on acidic bubble pack rather than a non-acidic medium such as ethafoam. One institution pads their artifacts with facial tissues, under the mistaken impression that they are acid free.

In addition to these logistical problems, the division of a site archive into diagnostic collections that are stored under higher quality conditions and bulk collections that are stored in cheaper storage conditions may have an effect on the archaeological interpretation of the site. The division of the site archive into

two groups, one which is easily accessible, and one which is rarely examined may promote conservative re-assessments. The original division is often done by the excavating archaeologist, or by the curator who is familiar with the research. The published reports and interpretations may then determine the selection of the diagnostic or 'significant' artifacts. The accessibility of these artifacts which support conclusions drawn in the interpretation of the site will find their way into a diagnostic collection, while artifacts which may indicate other interpretations may be consigned to bulk storage as 'noise'. Under the arrangement of collections into diagnostic and bulk groupings, we are forced to go along with the initial sort, which may have the result of reinforcing the interpretation already formulated. Subsequent research based on those artifacts in high quality storage will likely reinforce the original analysis. We are asked to trust that the original sort was accurate, that no important artifacts have been missed. I believe this trust is misplaced. Given the frequent occurrence of formed artifacts in detritus bags, this assumption is in error. In addition, artifact collections which are stored in remote locations are more vulnerable to vandalism or intentional deaccessioning. If the evidence for contrary interpretations is only found in such collections, the original interpretation is further protected.

In many repositories a series of unwritten rules seems to guide the selection of artifacts for diagnostic storage. For example, at several repositories all projectile points were automatically kept in high quality storage, while the

majority of scrapers were consigned to bulk storage with the flakes. The differential valuing of these types of artifacts was surprising, and may reflect a gender bias among previous generations of archaeological curators who valued points and hunting equipment over domestic artifacts. By consigning scrapers to bulk storage, this bias is perpetuated.

If collections are divided in this manner, it is critical that excellent records of those materials in bulk storage be recorded, inventoried carefully, and the inventory of these materials be kept with the diagnostic materials as well as in the main information system. A series of pointers must be created which cross-reference the two collections, allowing a subsequent researcher to integrate the two into a complete site archive. As the two collections are curated separately, and may be administered under two different sections of a bureaucracy using different procedures, ongoing vigilance is required. Bulk collections may be moved, culled or deaccessioned, possibly without the knowledge of the curator, causing the pointers in the diagnostics storage to become out of date. It is essential that these links be maintained. Without the pointers it may be impossible to reconstitute the site archive, and the context of the artifacts may be lost.

5. All documentation must be stored in an organized fashion, if possible all documentation on one site should be stored in one place, preferably near the collection itself.

The most useful reposited collections are those which were originally well documented. The original field and research notes should be complete and useable. Some field notes are written in illegible script. Some fade over time. Some (for example those written by Marius Barbeau), are in an idiosyncratic shorthand code that must be translated before the author becomes unavailable. It is an advantage if the original research was published and is readily available. When this is the case a subsequent researcher generally understands previous work and is better able to both formulate useful research questions and strategies and to choose collections likely to answer these questions. Beyond the simple cataloguing of data, one should record the project context - why it was collected, methodology used, persons involved, *etc.* It is the documentation which gives the collection context.

Reposited documentation should be organized by the principal investigator repositing the collection. A subsequent researcher should be able to reconstruct the original research strategy, methodology and results from the reposited collection and documentation. One should be able to determine which areas were not investigated and potential areas of weakness of the study.

All notes and records should be present, legible and indexed. Some repositories have gone to the lengths of specifying pencil hardness and paper quality (Parks Canada, 1991).

Information stored in formats other than paper should not be housed separately unless this is essential for its physical preservation. Some institutions house maps in the archives, still photographs in the photography division, artifacts in the collections division, field notes in research and film and video in yet another location. Institutions with this level of bureaucracy could be expected to have excellent location systems and adequate staffing to retrieve a complete site archive. However, even if this is the case, the distribution of data in a number of departments or locations adds another series of obstacles to research in the name of collections preservation. Under these conditions it is extremely difficult to assemble all the evidence from one archaeological investigation. While the individual piece of information may be preserved, the entire picture may be obscured and research rendered more difficult. Documentation on one site should be stored in one place - not scattered among many files. Oversize, oddly shaped documents, or those requiring special storage due to conservation concerns may be stored elsewhere if a master listing is maintained with updated location details.

Documentation should meet the highest professional standards and follow recommendations of relevant professional societies. Media used for documentation should be preserved according to professional archival standards. If the documentation is reposited on disc or in another electronic format, a paper format copy should be reposited as well. The repository should

ensure data in electronic formats are upgraded before the format becomes unreadable due to age or format incompatibilities.

As discussed elsewhere, documentation created within a museological collections management system is usually inadequate to meet the needs of researchers. Documentation provided by the repositing archaeologist must be maintained in its original order. Copies of these data may be reformatted and used in collections management, but the original data must be preserved in their original form.

The repositing archaeologist should turn over a complete catalogue of the collection, to the level of specificity required by his or her research. The catalogue should be consistent, such that all the formed artifacts are treated in a similar manner, all chipping detritus treated in a similar manner, and so on. If this is not possible, an explanation of the sampling strategy used should accompany the documentation.

6. A master list of all materials must be kept in a main file.

A list of all materials turned over to the repository by the archaeologist should be kept with the primary documentation on the site, for example, in the same file as the site record and permit. A list of all subsequent documentation, reports, publications, correspondence, *etc.* should be added to this master list in

an ongoing maintenance programme. This may require the co-operation of the repositing archaeologist to ensure completeness. These lists should be comprehensive, detailing all formed, catalogued artifacts by number, listing all bulk materials such as flakes, all notes, all photographs and other images, all maps, all samples, *etc.*. This provides a master list for subsequent researchers. Without it, they would not know if they were missing an entire subset of the collection such as all organic artifacts, a series of aerial photographs or plan drawings.

7. Professional conservation standards must be met in both the storage and treatment of collections and their documentation

Archaeological materials are often thought to be enduring and stable. These remnants may have survived hundreds, perhaps thousands of years of burial in a natural environment. Many objects, particularly some lithics, are quite sturdy. However a sizable percentage of collections retrieved from frozen or wet sites and historic sites may be quite fragile. Perhaps the most critical factors in the curation of organics or metals are the conservation measures.

These conservation measures promote the continued physical existence of the materials. There are a series of risks to which artifacts and other archaeological materials are exposed during the period after excavation. When an object is excavated it is removed from the surrounding matrix. The removal

of the matrix changes the physical environment of the artifact, possibly changing the temperature, the humidity level and the physical support formerly provided by the matrix. When the equilibrium to which the object has become acclimatized is altered, the object is vulnerable. In terms of their physical preservation, objects are most at risk immediately upon excavation. It is essential that adequate preventive conservation measures be available on site during excavation. By the time an object has been transported to a laboratory the most dramatic damage has often occurred.

Burial conditions of inorganic materials may promote deterioration. Ceramics and stone artifacts may be broken or impregnated with salts. Porous ceramics or stone may be permeated with groundwater in which minerals and salts have been dissolved. These soluble salts and minerals promote post excavation deterioration. Metals may have begun corrosion processes prior to burial. During burial, total mineralization of the object may occur. Post excavation treatments may cause the lamination of ferrous objects or the removal of information bearing surfaces.

Organic objects are particularly vulnerable to dimensional change immediately upon excavation. Sharp changes in ambient temperature and humidity which normally accompany excavation are particularly damaging to organic artifacts.

Paper and film documentation must be copied to provide an off-site security copy. Pairs of institutions often reciprocally store duplicate documentation. Attention should be paid to avoid storage conditions which will embrittle paper and fade film.

All processes for collecting, preparing, and sampling, as well as the maintenance and curation of specimens or artifacts, should be analyzed relative to the goals of use and preservation to insure that all techniques employed and all materials used are thoroughly documented, follow sound preservation practices, and fulfill the desired objectives for the specimen's intended use.

Conservation and preservation treatment should meet the highest professional standards. Generally, the preferred approach for research materials and artifacts will involve preventive conservation. Physical or chemical modifications may adversely affect analytical potential. Since it is not possible to anticipate uses that may become possible with advances in technology, methods that alter reposited materials as little as possible are preferred. Techniques and supplies selected should be those that are the most stable and have the greatest longevity. In addition, many treatments must be monitored over time to fully understand their effects. Added materials should be removable wh_ ever possible. Exceptions must be fully justified and documented.

Treatments should reflect the most recent, scientifically substantiated conservation information. Treatments should be undertaken only by conservation personnel, within the limits of their area of expertise and facilities. Interventive treatments should be performed only with the consent of an objective, informed individual or individuals so authorized by the institution, and may require consultation with conservation experts outside the institution. In some cases the repositing archaeologist or a recognized expert in the study area should be consulted.

It is the responsibility of staff to clearly identify materials that are inherently hazardous or have been made so through preparation or conservation practices. Staff should implement appropriate safety precautions.

Destructive sampling of specimens or artifacts must be justified by the quality and quantity of the information to be gained, evidence that the information is available only through the proposed sampling, and evidence that the investigator has the necessary expertise to extract that information. Procedures should be established to prevent unnecessary sampling. Sampling must be fully documented and approved in advance by individuals delegated with such authority (Cato, 1993).

It is unethical to modify or to conceal any characteristics of an archaeological artifact through restoration. The presence and extent of restoration should be detectable, although it need not be conspicuous. Methods and materials used must be fully documented. Documentation is the responsibility of all staff. All techniques and materials used in collection management, care, and conservation must be fully documented.

Conservation treatments or destructive analysis performed on human remains or sacred objects must be done only with the explicit permission of the originating group, the nearest Band Council or other appropriate body after a full discussion of the proposed treatment and the information expected to be gained by the procedures.

III   Professional judgment

1.   **Archaeological curators and collections managers should have thorough archaeological knowledge and be empowered to exercise this judgment during the curation of collections.**

2.   **Collecting archaeologists must exercise their professional judgment in the formation of the archive, taking the capabilities of the repository into consideration when initially choosing a repository, and discussing curation issues with repository staff as early as possible.**

1. **Archaeological curators and collections managers should have thorough archaeological knowledge and be empowered to exercise their judgment based on disciplinary values during the curation of collections.**

Archaeological curators and collections managers should have a thorough knowledge of the archaeological material culture curated in their repository, as well as relevant theoretical concerns, the history of archaeology in the area and the scope of relevant current research. These areas of expertise are needed to inform the day to day decisions required in managing the collection.

Archaeological curators and collections managers should have the authority to ensure use of collections is carried out in ways that are compatible with preservation objectives and concerns held by indigenous peoples, whenever possible. Certain materials may be considered too rare, fragile, culturally sensitive, or significant for exhibition or loan (e.g., type artifacts, historically significant artifacts, or materials in poor condition). Research archaeologists examining reposited collections must respect the professional guidance and direction of curators and conservators when handling such materials.

There are many calls on archaeological materials, and many uses to which archaeological materials may be put. Artifacts may be borrowed for exhibition, exhibited permanently, cast, photographed, used in public programming, included in hands-on children's programmes, lent as theatre props or as office decoration, as a centrepiece of performance art, *etc.*. It is not possible to foresee the range of uses, just when one thinks a limit has been reached an even more outrageous request is made. A curator must keep a balance between legitimate public and scholarly access and the preservation of the objects and their context.

Research objectives may necessitate intervention or destructive sampling, but this should be permitted only when the potential for gaining knowledge by such means justifies sacrifice of the materials, and when the knowledge will be shared with the archaeological community. These procedures must be undertaken in a controlled manner. Original data, documentation, and records of specimens that have undergone destructive sampling should also be preserved. Archaeological curators, as professionals responsible for the preservation of collections, must retain the right to limit destructive research on reposited collections. In order to responsibly assess requests for destructive analysis, curators must keep current with research and analysis techniques, assessing the collection for samples which may be analyzed using new developments.

New developments in chemical and other analysis techniques will allow researchers to examine reposited collections in new ways. Reposited collections should be able to accommodate this through the curation of samples. While large quantities of samples cannot be kept indefinitely, it is reasonable to curate small amounts. W.J. Wintemburg, for example, retained samples of charcoal and wood recovered from several Iroquoian sites excavated in the 1930's, on the supposition that new analytical techniques might be developed. After the development of radio-carbon dating, these samples were run and dates obtained (J. V. Wright, pers. comm. 1995). The research potential of many reposited collections will never be exhausted as long as researchers bring innovative ways of examining the collections, new analytical techniques and new problems.

Professional archaeological judgment is an essential component of archaeological curation, and takes precedence over cost accounting factors, while recognizing the need for fiscal responsibility and the future implications of collecting and accessioning decisions. The goal of archaeological curation is to prolong the life of the materials and their documentation and the preservation of the research value of the collection.

2.   **Collecting archaeologists must exercise their professional judgment in the formation of the archive. They must take the capabilities of the**

repository into consideration when initially choosing a repository, and when discussing curation issues with repository staff. This should be done as early as possible.

The excavating archaeologist and the curator of the repository which will receive the collection should meet prior to the excavation to discuss logistics and collections management. Some repositories require an archaeologist to enter into a curation agreement with the repository before a collection is accepted (Hannibal and Twoomey, 1986). Some repositories charge an initial curation fee (Hannibal and Twoomey, 1986). Some are considering the imposition of annual curation fees (Arkansas Archaeological Survey, 1994). These are certainly issues which should be discussed prior to reposition.

Details of packaging, numbering schemes, classifications, *etc.* should be among the details discussed. This will reduce duplication of work and streamline field, laboratory and repository processes. Prior knowledge of the quantity of archaeological materials expected, and an approximation of the types of artifacts and other materials expected will allow the repository to budget for the anticipated expenses associated with these incoming collections. Pre-field consultation will allow the archaeologist to make use of some of the resources of the repository, from such things as in-field conservation advice to

access to acid-free packaging and re-usable crates borrowed from the repository to ship collections from the field to the lab.

The excavating archaeologist should take the capabilities of the repository into consideration when choosing a repository. If the archaeologist expects a large number of organic or ferrous artifacts, s/he should ensure the repository has the conservation expertise and budget to adequately conserve them. In some cases, the conservator should begin treatments in the field. If the archaeologist expects an extremely large collection which may overwhelm the cataloguing and processing capabilities of the repository, other arrangements should be discussed. If the archaeologist expects to recover large artifacts, for example from an industrial context, these should also be discussed.

The repositing archaeologist must be allowed to exercise professional judgment in the preparation of a collection for reposition. If the collection results from a development mitigation project, if it is largely duplicated in other site collections, or is not considered to be significant, the archaeologist should be able to reposit it with a minimum of preparation. If the collection arises out of a research strategy which has been documented and is published, if the collection contains artifacts and samples which are significant in some way, if the collection is unique, the archaeologist has a responsibility to prepare the

collection thoroughly, ensuring a subsequent research will understand the original collection and its organization.

If the preservation of an artifact is beyond the capabilities or financial resources of an archaeologist (pre-reposition) or a repository (post-reposition), the collection should be critically assessed. If the research value and significance of the collection merit its continued preservation, alternate arrangements should be made. If the deteriorating portion of the collection is judged to be worth preserving, an archaeologist may draw upon the conservation expertise of the repository prior to final reposition. If the collection is easily duplicated in other sites (for example deteriorating ferrous nails from an historic site), a portion of the collection may be examined earlier in the analysis than planned, documented and left to deteriorate. The option of disposal or transfer to another facility may be explored.

The collecting archaeologist makes in field decisions on which materials will be collected and which will be left on the site. Some materials are better preserved in a stable underground environment. These should be preserved by re-burying in marked locations.

Legal aspects of this vary a great deal from one jurisdiction to another. In the Ontario Heritage Act, under section 47, the Crown claims ownership of every protected heritage object found at a protected heritage site. Thus, an

archaeologist is required by legislation to collect every artifact found - every fragment of brick, every sliver of window glass, every piece of chipping detritus and every nail, even if the archaeologist is investigating only the prehistoric component of the site. While the Act requires the removal of every artifact, it does not require the Crown to curate the resulting collections, forcing archaeologists to store large quantities of materials at their own expense. The legislation covering collection of materials should be amended to allow the use of a professional assessment, giving the archaeologist the legal ground to leave some materials on site. Amendments to this Act have been in process for some time (William Ross, pers. comm. 1995), however the revised New Ontario Heritage Act did not pass the Ontario legislature prior to the defeat of the Rae government. The Harris government is not expected to priorize the passage of this legislation. In Quebec, on the other hand, archaeologists typically recover only 20% of the artifacts, leaving 80% in the site (William Moss, pers. comm. 1995). The excavating archaeologist must be given the latitude of professional expertise in making in-field judgments on what to collect and what to leave on-site.

Once a repository has agreed to accept a collection, to some degree, it relinquishes the ability to limit what will be accepted. From a repository's administrative perspective, the point at which major future curation costs can be controlled is at the point of initial collection in the field. Administrators and curators would admonish archaeologists to collect those materials which are

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necessary to research, but not to collect materials for which there is no immediately foreseeable use. In limiting future curation costs an archaeologist would select a representative sample of detritus, for example, if this is possible. Obviously, some sites will produce large quantities of 'redundant' materials - fragments of brick, nails, window glass or rock shatter, plain body sherds, *etc*. By limiting the quantity of materials reposited, an archaeologist is assisting the curator in preserving the collection. If the collection is perceived as duplicative, unwieldy and of little utility, it would be considered for disposal before a collection which could be seen to be carefully collected with consideration of curation costs.

Some materials will degrade in storage, with a fairly short self life. Ferrous materials, or salt impregnated ceramics are good examples. These may be collected, analyzed in the field or laboratory, then reburied, rather than stored in a repository. No repositories have the resources to conserve thousands of iron scraps which have no research potential.

Archaeologists may minimize the long-term expense of curation through the reposition of a minimum volume of samples and specimens. Again, the archaeologist must exercise professional judgment weighing research requirements and curation costs. Collection for both current and those projects reasonably expected to be undertaken in the foreseeable future is reasonable. Those materials which cannot be demonstrated to be relevant to the specific

purpose of the research should not be reposited. Several curators considered samples, even radiometric samples to have analysis value only. They would not accept soil samples or radiometric samples as they were considered part of the site analysis. Preservation of a second sample for future analysis was not considered reasonable.

IV   Professional relationships

1.   Archaeological collections must be valued by a variety of interest groups in order to demonstrate their importance.

2.   Use of the collections by First Nations should be encouraged.

3.   Use of the collections by university based archaeologists should be encouraged.

4.   Competition between repositories should be avoided.

1.   Archaeological collections must be valued by a variety of interest groups in order to demonstrate their importance.

In a shrinking fiscal environment, curators are routinely required by administration to justify the retention of archaeological collections. Retention in the interests of science is an argument understood by university departments of

archaeology but is not found persuasive by many large museum administrators, government auditors or accountants.

To justify the retention of even extremely significant Canadian archaeological collections curators must prove the collections are of use. Collections must be shown to be of use within the institution in terms of research, public programming or exhibition. But, perhaps more importantly, the archaeological collections must be shown to be of value to those outside the repository. Value is most easily gauged by simple quantification. What percentage of the reposited holdings have been examined in the past fiscal year? Given the curation budget, what did each use of the collection cost? By increasing use of the collections, curators are better able to defend them from deaccessioning administrators.

To this end, curators of archaeological collections must foster professional relationships with as many individuals and groups as possible. The three most obvious are the university based archaeologists, contract archaeologists and First Nations. Broadly based professional relationships are weighted more heavily by museum administrators, as they reflect the opinions of a broader sector of the general populace. Therefore, relations within the archaeological community are not weighted as heavily as affiliations with First Nations or other sectors of the public in the administrative cost accounting. Thus, building professional communities of support within the First Nations will

become more important over the next decade. Support from outside the discipline, particularly support from a highly politicized interest group may be critical in determining the funding levels for archaeology in the near future.

All archaeological materials should be made as accessible as possible to as wide a public as possible. While archaeological collections are normally recovered under publicly funded programmes, some groups within the larger public have a specific interest in archaeology. These potential allies should be welcomed by custodial institutions.

2. Use of the collections by First Nations should be encouraged.

Some museums have encouraged First Nations use of collections through custodial agreements, where sacred or important objects are cared for in the First Nations community. While the object is legally owned by the repository, it is cared for within the First Nations' communities. This is not practicable for the vast majority of archaeological materials which are of little public or First Nations interest. However, strategically chosen precedents may foster relationships which will increase public support for repositories.

3. Use of the collections by university based archaeologists should be encouraged.

In an environment where restrictions on fieldwork as a result of political tensions with First Nations have been a reality for some time, and are likely to grow until the land claims issues are resolved, more archaeologists and students of archaeology will turn to reposited collections as a resource base.

Students should be encouraged to work on reposited collections, many of which have not been adequately researched and published. These collections must be made available by curators who must critically assess the collections, in order to present the opportunities for research.

Curators must assess the collections for their completeness and for the adequacy of their documentation. Some collections have had significant artifacts lost through use in research, public programming or exhibition. Other than the archaeologist who originally excavated and analyzed the collection, the curator is in the best position to know the collections. Curators must foster relations with university based archaeologists in order to facilitate student use of collections.

There is an undeniable focus on 'new' research in graduate work. Students are encouraged to develop a research strategy for their own excavations rather than trying to salvage a research question and strategy from previously excavated collections housed in repositories. However, fiscal

restraint and a resistance to excavation on the part of some First Nations will force more re-examination of reposited collections. Well-developed original research using reposited collections, should be welcomed in academic departments.

One of the more effective ways of validating the continued maintenance of reposited collections is active use. University faculties must recognize the value of existing collections and express this in defense of reposited collections. Faculty could do this through the acceptance of doctoral dissertations which utilize reposited collections, possibly in a comparative study. This would provide curators with a reason for on-going curation beyond arguments of traditional practice which appear self-serving. If archaeologists begin to use collections as historians use the resources curated in archives, the collections would be better protected as a valuable research commodity. With a greater demonstrated use of the collections, curators would be better able to justify improved curation procedures and conditions, improved documentation services and continued curation.

4. Competition between repositories should be avoided.

Fortunately, competition between repositories for collections is rare in Canada, unlike the situation in some other countries (Carrington 1986).

Provincial and national museums could be seen to be competing for the same collections, creating the appearance of conflict of interest and the duplication of effort. Such competition would not benefit either repository. Some of those interviewed expressed anger toward colleagues who had used collections and policy to 'empire build' within the larger bureaucracies.

Chapter Seven   Conclusion Archaeological curation in a post modern
context

It has become clear that the curation of archaeological materials in a
repository is no simple matter. It is affected and modified by the dominant
archaeological paradigm, by the legislative context, by economics and by
political issues. Finally, the institutional context, and the type, size and fragility
of the collection are all factors that affect curation practices. In this dissertation I
have attempted to outline the factors that affect curation and to survey actual
curation practices as found in a wide variety of Canadian repositories during a
short period of time. Against this background, I have proposed a set of
standards for archaeological curation that provide a comprehensive framework
for a rational approach to the preservation of archaeological collections in the
current environment.

Curation practices, as currently implemented in Canada, relate to two
theoretical paradigms discussed in chapter two. Processual curation is carried
out within the framing paradigm of science. Processual archaeological
investigation involves hypothesizing, testing and analyzing according to the
rigours of scientific method. Archaeological collections resulting from such
investigations are curated for their scientific value. The collection is seen as an
archive of evidence. Artifact collections are curated as a unit, with strict
attention to the maintenance of provenience and other context indices.

Processual curation logically requires the cataloguing of everything, the numbering and describing of each piece of evidence. While artifacts are catalogued individually, they are valued in their context, not as independent objects. In processual curation, artifacts are valued for their informational content. In practice, however, even in repositories dedicated to this ideal, the process is too expensive, and shortcuts are made.

Post-modern curation is affected by the exigencies of the fiscal, legislative and political environment in addition to post-processual theory. From a post-modern view the museum is no longer authoritative. The archaeologist as scientist is no longer authoritative. The framing paradigm is politics, where politics is an understanding of human action in the past and the present in terms of self interest. In post-modern curation, artifacts are seen as tools that are available to a wide variety of interest groups. As archaeology is publicly funded, the public has a voice, occasionally a determining voice in curation policies and practices. In this context, responsible curation attempts to make collections available to greater numbers of people and wider types of interest groups in an attempt to justify continued curation. In a time of fiscal restraint, expenditures are legitimized through widely grounded use. If it can be shown that archaeological collections are important to a broad sector of the voting public, expenditure of funds more easily is justified.

In post-modern curation, artifact collections are valued for their symbolic content. They are cared for in such a way as to allow the objects to be used as symbols of political interests. Symbolically important objects are not curated within their context, inaccessible within the site archive. Rather, they are valued for their multi-referential symbolism, and showcased in exhibitions and publications, stored individually and are treated individually in documentation systems. Post modern curation of artifact collections allows them to be used as symbols of political action.

Economic constraint has forced museums to justify their expenditures in all areas, including collection maintenance. The most acceptable justifications appear to be couched in terms of use by a wider public. A post modern view values accessibility over all, that it is the democratic right of all citizens to have equal access to the material heritage of the country. Equal access by all is paramount over access by a small group of archaeologists. Archaeologists are seen as a small special interest group. The archaeologists concern for the preservation of collections as scientific evidence is viewed as self-interest.

There are many differences between the understanding of reposited archaeological materials in a general museum collection as a public resource to be used in exhibitions, education and publications and the understanding of reposited archaeological materials as a site archive, an interpreted sample of the archaeological record. The curation practices that derive from these two

understandings are quite different, and may in some cases be mutually exclusive.

It is equally clear that there is a general agreement by both processual and post modern curators that the long term preservation of collections is desirable. However, great differences in opinion exist as to how these goals should be achieved within the current legislative environment and fiscal climate.

When I began the survey of repositories, I anticipated that there would be several excellent examples of archaeological curation, institutions in which the records are clear and unambiguous, where the physical storage of the collections is organized by site or by other logical classification, institutions where there are adequate resources, both human and financial to meet the standards expected by the archaeological discipline. I also anticipated there would be several examples of chaos, institutions where policies did not exist, where collections are fragmented, and records are lost.

I found collections that were well curated, with organized records and suitable well maintained storage facilities. All repositories were under-staffed in relation to the size of their mandate. To my surprise, I also found archaeological collections which are very well organized from a museum perspective, but which could not be used in an archaeological reanalysis. While the objects

themselves are well preserved and accessible, their archaeological context has been stripped away by the curation practices used in the museum.

I also found collections that have been stored in exactly the condition they were on the date of reposition, collections that had not been touched since reposition, collections that have not been modified by museum curation practices. These collections have been preserved in all the chaos or organization created by the original archaeologist. Some of these collections are well preserved and well organized, while some are well organized bags of corrosion products, destroyed by lack of conservation care. These collections are not indexed and not individually accessible, and have not been used in museum programmes. Not being indexed, they are not accessible to subsequent researchers who might search for them. While in some cases they adequately record the work of the original archaeologist, they are also at risk of deaccessioning or disposal as they have not contributed to the mandate of the museum.

Collections that are curated in dedicated archaeological repositories do not fare much better. These collections are held in provincial government departments of archaeology, whose primary mandate is the management of archaeological sites as cultural resources. The preservation of collections resulting from mitigative work, while seen as a responsibility which should be done well, is not a priority in these departments. Faced with severe budget

reductions that have affected all areas of administration of cultural resources, curation has suffered.

Observation of the repositories' collections management system:

Most registration systems designed for use in historical or anthropological museums are designed to accommodate individual objects. They are set up with a single word in the 'object name' field (if automated) or are categorized by object type and function. Thus each separate mask, rattle or painting has its own record. This record synthesizes the information known about the object, what it is, where it is from, the means by which it entered the museum collection, its physical condition and location, its loan and exhibit history, *et cetera*.

A few historical or ethnological objects are parts of a set - sets of dishes or clothing for example. Historical museums have found ways of adapting their registration systems to accommodate these types of collections. Archaeological collections are not organized by object, but rather, by site. The nearest parallel may be found in paper archival collections which may also be curated as a series or in groups. The issue of handling artifacts by group or individually is at the core of the difference between processual curation and post-modern curation. It works itself out in storage, the design of the information system, in finding aids and location indices. In some ways, a purpose-built system designed to curate archaeological collections scientifically is an anomaly in the

museum world, while an information system designed for post modern curation of archaeological, historical or ethnographic museum collections is the norm.

Curation and institutional re-organization

In a climate of fiscal restraint, museums must work efficiently. This trend toward efficiency of collections management has prompted the re-organization of some repositories, splitting collections management from the research functions and staff of the institution. While this delegates the routine tasks of collection maintenance to information specialists, conservators and managers, it appears to be impeding researchers' access to collections. With collections managers responsible for larger and larger collections, the intimate knowledge of the collections which is built over a research career is lost. The significance of each site archive may not be obvious to a manager. With a large scale collections management system, all collections may be processed equally, and a rational system which will ensure the preservation of all parts of the site archive may be instigated.

When a collection is curated in a research context, it is valued for the knowledge that it generates. It is integrated into the research done within the division or section. If the object or collection is separated from the research context and treated as an art object, the research value of the site archive may be compromised. If the collection is curated within the research section, the

chief curator must ensure all researchers take their collection management duties seriously. In addition s/he must ensure that the resources needed to manage the collection are allocated. The recognition of collections management and maintenance costs may require the reduction of publications or fieldwork budgets.

Three models of curation

As described in chapter one, I propose a three part model of institutional curation employed in Canada, the centralized repository, the distributed network, and the negotiated division of collections.

A centralized repository involves the concentrating of all archaeological collections curation in one institution. There are obvious advantages to this - the collections will not 'get lost ' in an institution whose focus is elsewhere, such as the exhibition of post-contact history of the province or the research and exhibition of the natural history of an area. Staff with expertise in archaeological collections management can be hired and given the resources to do their job without competing calls on their attention. However, in times of fiscal restraint, these institutions may be seen as unproductive and expensive 'warehouses' that do not contribute to a government's public responsibility. They are vulnerable. They may be downsized or eliminated with little public outcry. The collections 'orphaned' by this process are then typically either sent to a government warehouse where they might be kept with surplus office furniture in

uncontrolled storage, or the collections are dispersed among other museums and research institutes. Examples of centralized repositories may be found in New Brunswick and Nova Scotia. Alberta and Saskatchewan have set up centralized repositories under legislation.

A distributed network reposits collections in a number of institutions across the province. This distributes the cost of curation, but leads to several problems. The institutional mandate rests in other areas, therefore the archaeological collections are often the last to get scarce human and financial resources. Staff are usually trained in other disciplines such as military or political history. They are often not aware of the specific requirements of archaeological curation. Finally, in this model researchers wishing to use the collection may be forced to travel between several institutions in order to view collections from a region, or even from a single site. Examples of a distributed network may be found in British Columbia and Manitoba.

A negotiated division of collections involves the division of curation between two or at most three repositories. This can either combine the advantages or the disadvantages of the other two schemes. It may be difficult or impossible to reassemble the complete archive of data on the site. However, the mandate of archaeological reposition has been consciously articulated and given careful thought in these institutions. Thus procedures are more likely to be logically planned and agreed upon. The Northwest Territories has

negotiated a division of curation between the Archaeological Survey of Canada (Hull) and the Prince of Wales Northern Heritage Centre (Yellowknife).

Two exceptions to this model were found. Archaeological materials recovered from Yukon are legally required to be reposited in the Canadian Museum of Civilization in Hull. Yukon does not, however, send any materials south. Following the example of the Northwest Territories, Yukon keeps its archaeological materials north of 60. Yukon retains all borrowed materials, and does not send newly excavated materials south. The nationally maintained sites register has not received reports of newly identified sites in Yukon.

The other exception is Ontario. Under the Ontario Heritage Act, all archaeological materials must be recovered. This has been interpreted to mean each artifact, every scrap of window glass, every brick sherd, every flake of chipping detritus must be collected. The combined effect of the level of preservation of materials common in southern Ontario soils and this understanding of the legislation, the collections recovered under this practice are huge. However, the legislation does not require the reposition of these materials. While many archaeologists are able to reposit collections with either regional government archaeology branches or local museums, the large museums are refusing many collections. Therefore, a few private archaeological contractors have set up large warehouses where collections are curated on an on-going basis. Many archaeologists with smaller scale

operations simply keep the collections at home. In this situation there are few advantages, possibly the only institution that benefits is the government repository that might otherwise be required to curate the collections. The disadvantages, particularly the long term disadvantages are numerous. Collections may be orphaned when a contracting company disbands or the archaeologist retires. Contractors and other archaeologists do not spend scarce resources on the curation of stored collections. Deterioration in storage is inevitable. Finally, this leads to an appearance of private ownership of collections, and may encourage site looting.

Adoption of standards

In order to have a comprehensive archaeological research and curation system within a government department, there must be a solid legislative base (Burley 1994, J. V. Wright 1995 pers. comm.). This legislation should be relatively consistent across the country. Legislation with penalties, that can be enforced properly by provincial archaeologists could force other branches of government such as Highways or Forests to fund curation of collections resulting from archaeology on lands impacted by their programmes. While this might be an ideal, it is unlikely to occur.

The prevailing mood in Canada will not facilitate the inclusion of curation concerns in legislation. Burley (1994) has pointed out the long and difficult struggle to pass federal archaeological legislation, which has essentially gone

nowhere. As with the 1990 federal legislation, the much needed revisions to the Ontario Heritage Act likely will not be brought forward under the Harris government. Given the gross economic trends at present, and the current focus on decentralization, the prospects for the development and inclusion of curation standards in new archeological legislation are remote. The neo-conservative trends against intrusive government bureaucracy in favour of regionalized programmes are facilitated by the impetus to cut costs as part of an overall deficit reduction strategy. Given this climate, it is unrealistic to expect any movement on federal curation standards in legislation or policy.

The picture could be somewhat brighter if another approach were taken. There is an undeniable trend toward the development of professional and national standards in many areas. Archaeologists, museologists, conservators and others working in the heritage field are concerned with ethics, with the development of professional societies and associations and the establishment of the various fields as credible professions. Standards are part of this process. It is more realistic to work toward the endorsement of curatorial standards by professional associations.

The establishment of standards for archaeological curation is a multi-stage process. In order to move toward agreement on the need for archaeological curation standards and a definition of those standards, a long range plan must be proposed. The first step is to publish these guidelines and

actively solicit comment from a widespread group in a forum which will promote constructive debate. For example, they will be summarized as part of the Simon Fraser University Department of Archaeology's World Wide Web page. In this forum, comment will be received from interested people world-wide.

There are competing interests within the archaeological community. I expect diverse opinion, vociferously expressed on several aspects of these guidelines. In the text I have attempted to outline the background of the most prevalent positions. Even if the archaeological community can agree on national guidelines, the adoption of these guidelines by custodial institutions is by no means assured. Museums and other repositories have competing requirements on their budgets and expertise. Most institutions do not currently have the financial resources to meet their mandates.

After publication on the World Wide Web, the guidelines will be revised according to any reasonable comments received. They will then be summarized on at least two relevant listservers, where they will likely be discussed. Then the revised guidelines will be presented to the Canadian Museums Association and the Canadian Archaeological Association. It may be possible to get them sent to a sub-committee for revision prior to their formal adoption.

On a more long term front, the revised guidelines will be included in textbook or a handbook on archaeological collections management. There is no

adequate Canadian text at present. The proposal of such a handbook was enthusiastically received during my discussions with archaeologists and museum professionals.

In summary, this dissertation is a first step in a long process. In it I have outlined the relationships between archaeological theory and archaeological curation, examined the basic principles of archaeological curation, given an overview of the context in which curation is practiced in Canada. With this background, I have proposed a series of guidelines in four areas, the characteristics of a repository, curation practices, the professional areas of expertise and judgment and the professional relationships which are conducive to collection preservation and access. Finally, I have outlined the procedures which I intend to follow in ensuring further revision, adoption and implementation of these guidelines by archaeological repositories in Canada.

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