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Boundaries and Trading Zones
Between Conservation and Archaeological Practice

Thesis submitted for the PhD degree
University College London
Institute of Archaeology

Jacqueline Irene Zak

March 3, 2008
I, Jacqueline Zak, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.
Abstract

Although archaeologists and conservators share an interest in preserving the past, the exchange of knowledge between them, particularly in terrestrial, pre-colonial archaeology in the US, is still relatively uncommon. The research presented in this thesis specifically addresses how this divide was created, as well as how it is perpetuated. Perhaps more importantly, the research identifies points of intersection between these disciplines that provide opportunities for “trading zones” of knowledge.

The research is based on the premise that a profession defines itself through a shared understanding of the history, values, knowledge, skills, and abilities needed to function within it. Although this understanding may vary locally and individually, professional identities are shaped through the performance of practice, and differences in professional practice may become most visible during informal interaction in everyday activities and in more formal settings such as conferences and meetings. Another premise of the research is that disciplinary values can be viewed through elements of a profession’s material culture, such as its literature.

To identify the boundaries and potential trading zones between the disciplines of conservation and archaeology, the research strategy mixed qualitative and quantitative ethnographic methods. Activities of conservators and archaeologists were observed at three archaeological sites from 2003 to 2005 – one site in Southwest Asia, another in the Mediterranean region, and one in the US. These data were supplemented with observations of activities at professional conferences of archaeologists and conservators during the same time period, as well as a review of articles from two peer-reviewed journals from each discipline published in 2004.

Quantitative data were gathered from the journal texts and transcripts of audio and video recordings of activities on site and at conferences. Since a theme of risk emerged early in the research, this theme was used as a lens through which to identify issues of importance to both disciplines. Transcripts and journal texts were analysed against a list of “risk concepts”, and frequencies and contexts of these concepts were compared within and between disciplines. Results of the quantitative analysis pointed toward issues of importance in the qualitative data, and revealed that a primary boundary and potential trading zone between the disciplines involved interpretation. Furthermore, the results indicated that, as for archaeology, interpretation for archaeological conservation begins during excavation, making work together on site essential for sharing knowledge and enabling collaboration.
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Chapter 1 – Introduction

During an interview with an archaeological conservator, I asked about her approach to negotiating decisions with archaeologists. Her reply was that “It’s a matter of showing them what you know and understanding what they know”. In this simple statement, the conservator had touched upon the primary questions my research addressed: how is knowledge exchanged between conservators and archaeologists, and how does this exchange impact professional practice? Where are the boundaries between the professions that may constrain this exchange and where are the points of intersection, or trading zones, that facilitate the creation of new knowledge?

Conservators working on archaeological sites face many challenges. Like those in the medical profession to which analogies are frequently drawn, they may aspire, to the extent possible, to “do no harm”. Yet they must achieve this goal with limited materials and time, and often in extreme environments that are difficult to control. Perhaps even more challenging, they must undertake their work in situations where they may be viewed as “outsiders” or worse, a hindrance.

Although more common outside the US\(^1\), and within the US, in underwater and post-colonial archaeology, it is relatively rare to find archaeological conservators on site. Some conservators may be called to the field as the need arises, particularly if their specialty involves architecture, but those who work with objects most often apply their knowledge and skills after the object has come into a collection. Consequently, conservators are often removed physically and epistemically from the archaeological process.

To explore why this is so, I have focused my research on the nature of conservation practice as it intersects with archaeological practice. I will show how the

The work of archaeological conservators is negotiated, moment by moment, through “trading zones” of knowledge.

The underlying premise of my research is that professions are in a sense communities. As Traweek states, professions are

a group of people who have a shared past, hope to have a shared future, have some means of acquiring new members, and have some means of recognizing and maintaining differences between themselves and other communities (Traweek 1988, 6).

Wenger (1998a) suggests that one way communities recognize each other is through a “shared repertoire and resources such as tools, documents, routines, vocabulary, symbols, artifacts, etc., that embody the accumulated knowledge of the community” which he describes as “communities of practice”. Allee (2000) notes that these communities are “united by a common sense of purpose and a real need to know what each other knows. What sets these apart from teams, however, is that communities are defined by knowledge (author’s italics) rather than task” (Allee 2000, 7).

Although communities maintain boundaries between themselves and others in order to establish their special expertise, Galison believes that these boundaries are often permeable where activities with others overlap (1996). He describes these overlapping areas as “trading zones” where

the practice of activities [is] sufficiently congruent to move back and forth across divergent domains. What is shared is not common laws or a common ontology, but a new cluster of skills and a new mode of producing scientific knowledge...an arena in which radically different activities [are] locally...coordinated (Galison 1996a, 119).

Many approaches to an interpretation of the data I collected were possible, but I was lead to my strategy through a conversation with a conservator early in my research. I had been analyzing peer reviewed journals in conservation and archaeology, and noted that unlike archaeological journals, those for conservation did not allot extended sections for commentary and critique. When I mentioned this to the conservator, she suggested
that conservators were less likely to criticize each other in public because they were by nature “risk averse”.

The topic of “risk” came to the forefront again while researching the history of the archaeological and conservation professions. Several works on the history of conservation and archaeology note peaks of activity during the 1970s. For instance, Hartin (1990) states that during the 1970s, conservation experienced an accelerated growth of in-house opportunities for employment, international exchange of ideas, and advanced academic training in Canada, the US, and the UK. According to King (1998), new laws at this time also created more demand for survey and archaeological excavation than at any time in the history of the profession.

Many scholars have attributed these trends to increased economic and technological development, the impact of the environmental movement, or believe that the trends represent a manufactured consequence of the modern and post modern world (Beck 1999, Douglas 1982, Giddens 1991). Dietz and Rycroft (1987) assert that American federal programs during the 1960s and 1970s created an entire class of “risk professionals” who were mobilized to solve urgent problems.

Lupton (1999, 9) notes that the noun “risk” and the adjective “risky” have become increasingly common in popular and specialist discourses and cites a study showing an “exponential” growth in authors’ use of the terms in academic articles particularly after the early 1970s (Inhaber and Norman 1982).

Arguably, conservation by definition implies a focus on risk — that an object’s “true nature”, “value”, or “significance” must be saved from contamination or destruction. Risk as a topic of focus within conservation has steadily increased in the literature over the past several decades. As Ashley-Smith notes, "the word 'risk' was not frequent in everyday speech a few years ago, now hardly a news bulletin goes by without some mention of estimated risks to life, limb and civilization" (2001, 59).
This trend can be seen clearly in conservation by replicating the analysis cited earlier (Inhabler and Norman 1982) in *AATA Online*, a database of conservation literature. A search for the terms “risk” and “risky” in titles and abstracts since the 1920s shows that except for a small peak in the 1930s, use of the terms was fairly static until the mid 1980s, and since then, has continued to rise steadily (Figure 1.1).

![Figure 1.1 Trends in the use of the terms “Risk” or “Risky” in conservation literature cited in AATA Online](image)

According to cultural theorists, the manner in which we view risk embodies our identity. As Lupton states:

Our awareness and knowledge of these risks, and others, contribute to various aspects of subjectivity and social life, including how we live our everyday lives, how we distinguish our selves and the social groups of which we are members from other individuals and groups, how we perceive and experience our bodies, how we spend our money and where we choose to live and work. Those phenomena that we single out and identify as 'risks' therefore, have an important ontological status in our understandings of selfhood and the social and material worlds. Societies – and within them, social institutions, social groups and individuals – need this selection process as part of the continued operation. Risk selection, and the activities associated with the management of risk, are central to ordering, function and individual and cultural identity (Lupton 1999, 14).
It is through this “filter” of risk, then, that I chose to explore the boundaries between conservation and archaeological practice, and to identify the mechanisms through which the professions share the knowledge and skills of their practice.

Since professions do not simply appear in the present, any discussion about the current nature of a profession must be placed within its historical context. Therefore, Chapter 2 traces the development of both professions and their converging and diverging trajectories. In Chapter 3, I discuss archaeology and conservation as communities of practice through stages of professional development, workplace settings, “essential competencies”, and material culture. I present the theoretical context of my research in Chapter 4, and in Chapter 5, I describe my approach for gathering data through participant observation and interviews at three archaeological sites and several professional conferences. Chapter 5 also presents my approach to analysis which involved transcripts of discussion and narratives as well as articles from one publication year of four peer-reviewed journals.

I have divided the presentation of my qualitative and quantitative data into several chapters. The qualitative data are presented for each site visit in Chapters 6-8, and data from observations at conferences and meetings appear in Chapter 9. Chapter 10 presents some of the general characteristics of the literature analyzed. Each of these chapters can be characterized as an ethnographic account or “thick description” (Geertz 1973). That is, the chapters present an interpretation of some of the everyday activities and special events within the social worlds of archaeologists and conservators. Many of these chapters include excerpts of transcripts from discussion and narratives, and conventions for notation are found in Appendix 1.

With the qualitative data from these chapters as context, I present the results of a quantitative analysis of transcripts and journal articles through a theme of risk in Chapter 11. In Chapter 12, I discuss these results with reference to the descriptive data in earlier
chapters. I offer concluding remarks, thoughts on limitations of the research, and directions for future study in Chapter 13.
Chapter 2 – Historical Trajectories


Whether these trends can truly be discussed as a linear chronological progression is debatable (Daniel 1975, Kuhn 1962, Denzin and Lincoln 2003, Masterman 1970, Trigger 1989, Toulmin 1970, Willey and Sabloff 1974). Nevertheless, in the following sections I will examine the historical foundations and major milestones that have shaped archaeological and conservation practice as we know them today. It is not my intent to recreate the discussions of various historians here, but to present a brief overview of historical trends in archaeology and conservation, and to explore how these disciplines with a shared legacy linked to antiquarianism and prehistory have taken divergent paths as professions.

2.1 Antiquarianism and the Preservation of Monuments

Many scholars trace the beginnings of archaeology in the western world to the rise of the nobility and the merchant class during the Renaissance (Trigger 1989, Renfrew and Bahn 1996, Hodder 1992). During the late 15th century, the search for and recovery of objects for their aesthetic and commercial value was commonly sponsored by popes, bishops, and other nobility, and these ventures most often resembled treasure hunts for objects to fill “cabinets of curiosities” (Renfrew and Bahn 1996). Objects, privately
owned for their aesthetic or commercial value, were repaired by artists and craftsmen who considered modifications acceptable. For instance, it is known from historical documents that Michelangelo and Cellini restored classical statues. An example from one document describes Cellini’s process of removing corrosion from a bronze statue with a chisel (Sease 1996). Motivated perhaps by similar issues of private ownership, attention to monument preservation appears as early as 1462 with Pope Pius II’s law to preserve ancient buildings in the papal states, and in measures taken in 1471 by Sixtus IV to forbid the export of stone blocks or statues from his domains (Trigger 1989, 36 citing Weiss 1969).

Although considered a pastime for travellers and amateurs within the leisure classes, interest in archaeology spread throughout Europe and elsewhere with news of discoveries at Pompeii and Herculaneum in the mid 18\textsuperscript{th} century. In 1764, the “father of classical archaeology” Johann Winckelmann published \textit{Geschichte der Kunst des Altertums (History of Ancient Art)} and established art history as “a systematic and historically accurate discipline” (Hartin 1990). This field of interest was distinguished from classical studies through a focus on not only written texts but also material culture (Trigger 1989, 38).

During the 17\textsuperscript{th} and 18\textsuperscript{th} century, philosophies of archaeology and conservation converged with architecture as the restoration of monuments became part of a nationalistic fervour. One of the earliest documents on the subject was \textit{Memorandum zur Denkmalpflege (Memorandum on the Care of Monuments)}, written by Karl Friedrich Shinkle in 1815. This work called for committees “to draw up lists of everything which is to be found in their district” and for these lists to include “reports on the condition of these items [and] the manner in which they can be preserved” (Burman 1997, 271).

Public debates between the artist John Ruskin and the architect Viollet-le-Duc provide an example of differing views toward monument restoration during the mid 19\textsuperscript{th} century. Ruskin, an art critic and painter, published \textit{The Seven Lamps of Architecture} in
1849, which presented concepts of stewardship for the first time and distinguished restoration from repair (Philippot 1996). To Ruskin, restoration was “the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed” (Burman 1997, 274). However to Viollet-le-Duc, restoration was essential since “every added part, from whichever epoch, must on principle be preserved, consolidated, and restored in the style which is its own, and all this with religious discretion and complete renunciation of all personal opinion” (ibid., 22). The views of the artist Ruskin and like minded architects influenced the founding of the Society for the Protection of Ancient Buildings in 1877 (ibid.).

2.2 Scientific Beginnings

Many scholars link the spread of the “scientific method” in the English-speaking world to the founding of the Royal Society of London by Charles II in 1660. According to Trigger (1989, 61):

Descartes’ views, together with Francis Bacon’s emphasis on inductive methodology and the exclusion of negative cases, produced a new spirit of scientific inquiry that was reflected in the importance…placed on observation, classification, and experimentation. The members of the Royal Society rejected the authority that medieval scholars had assigned to the learned works of antiquity as the ultimate sources of scientific knowledge and devoted themselves to studying things rather than what had been written about them...

Antiquarians were elected fellows and the society sponsored and published many antiquarian studies that, by advancing the values of accurate observation, “more disciplined thought”, and the development of various dating methods, laid the groundwork for the discipline of “prehistoric” or pre-colonial archaeology (Trigger 1989, 64). By the 19th century the society had become the “principal arbiter of science in Britain”, yet archaeology, because of its amateur status, was apparently not in this category. As O’Connor and Meadows (1976, 78) note:

The acceptance of stricter limits on what constituted ‘science’ enhanced
the trend towards professionalism, for the subjects excluded – such as archaeology – included several where amateurs were most active. An irate archaeologist indicated this trend when he described the Royal Society in its new guise as, “a sort of Trades Union of Professors” (O’Connor and Meadows 1976, 78).

However, chemistry was accepted as both a profession and a science by this time, and its methods were applied to archaeological objects as early as 1818. At the request of the king, chemist Sir Humphry Davy began research on papyri discovered at Herculaneum. Davy’s strategy involved examination of an object’s condition and the impacts of decay affecting it before devising a solution for preservation, and it is an approach advocated by conservators today (Caple 2000, 51).

Although classical archaeology, with its links to art history, is traced to the 18th century, most scholars agree that “scientific archaeology” (a term often used interchangeably with “prehistoric” or pre-colonial archaeology) emerged during the middle of the 19th century (Daniel, 1975, Renfrew and Bahn 1996, Trigger, 1989). Scholars also believe that the beginnings of archaeological conservation can be traced to this theoretical approach (Caldararo 1987, Johnson 1993, Sease 2001, Gilberg 1987).

Renfrew and Bahn (1996) credit two influences on the development of scientific archaeology: James Hutton’s *Theory of the Earth*, published in 1785, which introduced the concept of stratification, and *Principles of Geology*, published by Charles Lyell in 1833. However, Trigger (1989) believes that new dating techniques developed in Scandinavia and studies of the Palaeolithic period and human origins in France and Germany formed the basis for this new focus. According to Trigger, prehistoric archaeology was defined by an interest in understanding technologies and patterns of change and the ability to construct relative stratigraphy:

Their aim was to learn as much as the archaeological evidence would permit not only about the patterns of life at any one period but also about how those patterns had changed and developed over time. In order to understand the behavioural significance of archaeological finds they were prepared to make systematic comparisons of archaeological and ethnographic data, to carry out replicative experiments to determine how artefacts had been manufactured and used, and to perform experiments to
explain the attrition patterns on bones found in archaeological sites. They also learned how to cooperate with geologists and biologists to reconstruct palaeoenvironments and determine prehistoric diets (Trigger 1989, 86).

One of the important influences in the early development of archaeological methodology was General Augustus Lane-Fox Pitt-Rivers, a professional soldier and first Inspector of Ancient Monuments (Corfield 2007). Pitt-Rivers’ excavations of sites in southern England during the mid-to-late 19th century applied “military methods, survey and precision to impeccably organized excavations...he was not concerned with retrieving beautiful treasures, but with recovering all objects, no matter how mundane. Pitt-Rivers was a pioneer in his insistence on total recording” (Renfrew and Bahn 1996, 31).

With the construction of roads, railways, canals, and factories in the 19th century, issues concerning archaeology and conservation gained greater awareness. As more archaeological material was recovered, “the attention of archaeologists turned from a preoccupation with megaliths, hillforts, and tumuli to the study of artifacts” (Trigger, 1989, 149). Consequently, needs grew for institutions such as museums, universities, and other organizations to address the requirements of related activities. With the transfer of private collections to public spaces, methods to research, organize, and maintain them became a more pressing necessity. Some of the methods developed from this need had profound impacts on archaeological scholarship. C.J. Thomsen’s work *Ledetraad til Nordisk Oldkyndighed* (*Guide Book to Scandianavian Antiquity*) was published in 1836 and grew from requirements to organize the archaeological collection at the National Museum of Antiquity in Denmark for exhibition. In this work, Thomsen first presented what later became the “Three Age System” for relative dating based on style, decoration, and context. According to Renfrew and Bahn (1996, 25), Thomsen’s method established archaeology as “a discipline involving careful excavation and the systematic study of the artefacts unearthed”.

As “scientific archaeology” developed, so did the first scientific laboratories associated with the care and treatment of archaeological objects. Thomsen’s work is a
milestone not only for archaeology but also for conservation. His techniques for treating newly excavated artefacts are still used today and include procedures to treat ceramics, waterlogged wood, and other fragile finds (Caple 2000). Another milestone for archaeological conservation practice was the arrival of chemist Friderich Rathgen to Berlin’s Koniglichen Museen in 1888. Rathgen’s laboratory devised many of the earliest conservation treatments such as the desalination of stone, the baking of unfired clay tablets to preserve their legends, the use of synthetic polymers for adhesion and coating of artifacts; all of which are still done to this day. Crucially, Rathgen carefully diagnosed the nature of the decay of the artefacts and kept records monitoring progress. Thus he was able to start building up a record of knowledge about successful techniques which could then be repeated (Caple 2000, 53).

To many, Rathgen is considered “the father of modern archaeological conservation” (Gilberg 1987).

2.3 The Rise of Institutions

By the mid 19th century, full-time positions began to become available for archaeologists in major museums in larger cities and later at universities. The first Professor of Archaeology, J.A.Worsaae, was appointed at the University of Copenhagen in 1855, and the first PhD in pre-colonial archaeology in the US was awarded to Frederic W. Putman at Harvard in 1894 (Trigger 1989, 128).

During this time in the UK, Levine argues that amateur associations became marginalized and therefore were no longer “impediments to claims for professional and institutional recognition” (Levine 1986, 173). As Levine continues:

The triumph of the new professionals was in confining antiquarianism to the fringes of historical enterprise where their efforts posed no threat to the monopoly of expertise necessary to the standing of the new professions. The antiquarians, rarely salaried to their historical interests and lacking access to the university community, found themselves marginalized (ibid).2

2 Corfield (2007) notes that “2007 marks the tercentenary of the Society of Antiquaries of London, the oldest and still one of the leading learned societies in the UK after the Royal Society. Amateur archaeology continued to flourish in the UK at least until the 1970s and is currently experiencing a renaissance”. 
Oxford established a chair of classical archaeology in 1884, although pre-colonial archaeology was not recognized at Oxford until after WWII. At Cambridge, classical archaeology was not included as a subject area until 1930, and Egyptology was not included until 1946 (Levine 1986, 171). The first course in Egyptology was taught at University College London (UCL) in 1890. This focus of interest at UCL was due to Sir William Flinders Petrie who, along with his wife Hilde, had excavated in Egypt and Palestine since the 1880s and housed the collection at the university. Petrie contributed to archaeology by promoting meticulous excavation techniques, insisting on the collection and description of everything found, and through a commitment to publishing information about his work (Trigger 1989).

Conservators also consider Petrie an innovator through his interest in preserving finds as they were excavated. In 1888 he published the article, "The Treatment of Small Finds" in the *Archaeological Journal*, which presented the first detailed description of conservation field techniques in English (Caple 2000). Petrie’s approach, still used by conservators today, involved an attention to the nature of materials, and the development of techniques addressing block lifting, reburial, consolidation, desalinisation, cleaning, joining, humidification, and packing (Sease 2001, 184).

Another significant event for archaeological conservation was the publication of *Merkbuch Altertimer Anszugraben und Anszubewahren* by Albert Voss in 1888. It was the first textbook on the conservation of archaeological materials (Sease 2001), and was published as a result of concerns for the preservation of Egyptian objects in museums throughout Northern Europe (Caldararo 1987).

In 1895, Georg Rosenberg came to Denmark’s National Museum where, until 1941, he pursued interests in the preservation of inorganic and organic materials (Salomonsen et al. 2006) and published *Les Antiquites en Bronze et en Fer et Leur Transformation et Leur Conservation* (Corfield 1988).
The rise of museums, teaching positions, and the growing professionalization of archaeology had several consequences during the 19th and early 20th centuries. Root (2004) suggests that one consequence was a change in the participation of women in archaeology. Although they had been actively pursuing their interests as tourists and amateurs along with their male counterparts:

As archaeology became more professionalized, new social mechanisms of discrimination took root. Professionalism typically carries with it the perceived need to cultivate and maintain a level of status (e.g., by creating and promoting a mystique of exclusive expertise through restricted access to professional membership). The same types of phenomena observed by Duffin for the medical profession as it closed ranks in the second half of the nineteenth century can be traced somewhat farther in the field of archaeology (Root 2004, 25).

Another consequence of archaeology's professionalization was that, as in many growing disciplines, it became more specialized. These specialties not only included areas of interest based on geography or time period, but also involved specializations based on activities separated by time and space. In the latter case, those who had access to the object in its immediate context of the excavation were not necessarily the same individuals in the museum or university laboratory working with collections. For instance, although she was an experienced excavator, Petrie assigned his student Lone Gedye to the “technical” department where she restored pottery and cleaned metals, notwithstanding that his project was actively engaged in field conservation (Root 2004).

Another divide was the separation of technical expertise from applied research as the involvement of professional chemists became more common. As Corfield notes, “conservation was divided between scientists and chemists...and technicians or other manual workers who undertook work under the direction of curators or chemists” (1988, 5). For instance, at the British Museum, repair and cleaning was assigned to craftsman John Doubleday and later locksmith Robert Sparrow, while technical analysis was delegated to such scientists as Michael Faraday, William Brande (Watkins 1997), and Alexander Scott (Plenderleith 1998). When the tomb of Tutankhamen was discovered, the
British Museum drew on the specialist expertise of professional chemist Arthur Lucas whose work included

the entire spectrum...including metals, pictures in all media, ceramics, wood, stone etc.; he gave general advice on cleaning, repairing and strengthening, and discussed the problems of light, humidity, dust, insect and micro-organisms (Corfield 1988, 4).

This divide, based on professionals with specialist expertise, took other forms in the first half of the 20th century as archaeologists sought to “delineate distinct culture groups and construct clear spatial and temporal frameworks for them” (Zeder 1997, 126). Although this shift in theoretical approach had earlier beginnings, the “cultural-historical” perspective came to dominate archaeological thought during this time period. Such concepts as stratigraphy, seriation (dating based on distinct characteristics of tools and ceramics), and classification became important means for establishing control over concepts of space and time (Trigger 1989).

Two publications influenced this trend. In 1924, Alfred Kidder published An Introduction to the Study of Southwestern Archaeology and was “one of the first archaeologists to use a team of specialists to help analyse artefacts and human remains” (Renfrew and Bahn 1996, 33). He was also one of the first to discuss regional reconnaissance and dating, selection criteria for ranking sites chronologically, seriation to establish chronological sequences, and stratigraphic excavation to address specific research (ibid.). Another influential work was The Dawn of European Civilization, published in 1925 by V. Gordon Childe who, according to Trigger (1989, 8), was the first to apply concepts of archaeological culture in a systematic fashion.

Interests in typologies and classification growing out of this approach contributed to a need for specialists in support of the interpretive work of archaeologists. However, at least in North America, conservation did not merit classification as a specialty. As Johnson states:

New World archaeologists have had little trouble accepting techniques
that help to answer their specific questions, such as dating (carbon-14, dendrochronology), materials sourcing (petrography), and diet (trace element analysis). However, they have rarely critically examined the techniques concerned with the preservation of data contained within artifacts (Johnson 1993, 264).

The technical divide in the US involved sites as well as objects. King (1987, 236) uses the development of legislation to show how the academic discipline of archaeology and the historic preservation movement evolved separately in the US. One example is the Antiquities Act of 1906, which authorized the president to designate historic landmarks to be protected, to accept donations of private lands, and establish a permit system for excavation on federal lands (Fowler 1987). However, according to King (1987, 238), the Antiquities Act did nothing “about the destruction of sites by the government or its agents during development and use of the land”.

The 1930s marked significant milestones in archaeology and the conservation of sites and monuments, and may also have signalled the beginning of a tradition of handling massive amounts of excavated materials without specialist knowledge. The first large-scale archaeological research campaign in the US was begun in response to federal works programs such as dam construction and the ensuing flooding of river valleys in the Southeast.

According to King (1987), this was the beginning of the “characteristic archaeological dilemma between the remains of the past and the needs of modern society: salvage archaeology” (1987, 238). King notes that “depression era labor was supervised by archaeologists and their students” and included excavation as well as the cleaning, sorting, counting, and labelling of objects.

One important result of these events for conservation practice was Douglas Leechman’s *Technical Methods in the Preservation of Anthropological Museum Specimens*, published in 1931. According to Sease (2001), this publication had a significant impact on North American conservation since most existing publications discussed Egyptian antiquities (Sease 2001). The first article in *American Antiquity*
relating to conservation was published in 1936 and written by archaeologist Forrest E. Clement, who essentially summarized Leechman's work (ibid.).

Meanwhile in the UK, the work of Alexander Scott (1921, 1923, 1926, 1932, 1932a, 1933) inspired *The Preservation of Antiquities*, published in 1934 by H. J. Plenderleith of the British Museum Research Laboratory. In 1936, Mortimer and Tessa Wheeler founded the Institute of Archaeology, which provided "some of the earliest format teaching in archaeological conservation" (Pye 1992, 3).

In 1931, the International Museums Office of the League of Nations sponsored an international conference for archaeologists, scientists, and museum representatives in Athens, primarily to discuss conservation of the Acropolis monuments. The conference resulted in the Athens Charter, the first document to gather an international consensus on the principles of monument restoration (Stanley-Price 2003). The charter also emphasized the priority of conservation over restoration and the importance of promoting preservation awareness to the general public (Jokilehto 1992). In addition, it stressed accurate documentation, the importance of backfilling, and the need for international collaboration between archaeologists and architects (Burman 1997, 281). Although "collaboration" with architects and "relationships" with museums were discussed, Matero et al. (1998, 133) note that the term "conservator" does not appear in the document "presumably because the professional discipline of conservation had not yet achieved formal recognition".

Perhaps in response to this lack of recognition, *Technical Studies in the Field of the Fine Arts* was published by Harvard’s Fogg Museum in 1933. It was the first publication specifically devoted to conservation, and as its name implies, it focused on the application of "scientific methods". As Corfield notes, "the tone was set in volume one with a substantial report by Rutherford Gettens on the radiography of copper and bronze objects" (1988, 5). It is also notable that the title specifies "fine art", which
implies a focus on objects for their aesthetic value, a concept at odds with the focus of many interested in the archaeology of North America at the time.

The Society for American Archaeology (SAA) was established a year later in 1934. Although its membership included archaeologists with a variety of specializations, most were interested in approaches that were theoretically distinct from those of the membership of the Archaeological Institute of America (AIA), who founded their organization in 1879 and were predominantly classical archaeologists. As Trigger notes (1986), classical archaeology developed from a humanistic tradition allied to study of the classics, art history, and epigraphic disciplines, while “prehistoric” or pre-colonial archaeology grew from a tradition influenced by work in natural sciences. Johnson (1993, 257) believes this difference holds significance for archaeological conservators in the US:

American classical archaeologists and anthropological archaeologists share little in terms of interests and theoretical and methodological principles. They work in separate departments in universities, excavate different sites, and analyze their objects differently. Their research interests are often completely different, sometimes at odds. In general, classical archaeology has supported conservation in the U.S. while anthropological archaeology has little knowledge of conservation (Johnson 1993, 257).

Events in American art history scholarship during the period leading up to and including WWII may suggest reasons why archaeological conservation in the US has traditionally been linked with art history rather than with anthropology. According to Crow (2006), it was during this time of “political catastrophe in Europe...[that] the cream of Old World scholarly achievement” arrived in the US to take positions at institutions such as Yale, Columbia, and New York University:

The Institute of Fine Arts housed at New York University, established itself in a few short years as the peer of any Ivy League program by incorporating the largest number of refugee Europeans (Crow 2006, 76).

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3 Anthropological collections in the US were, and still are in many cases, part of natural history collections—a circumstance often noted and critiqued by descendant communities.
The Institute of Fine Arts later developed the first conservation program in the US and no doubt served as a model for programs to follow which also emphasized the “fine arts”.

The next expansion of archaeology in the US occurred after WW II. According to some scholars, this was due to a combination of factors, including rapid development, the GI Bill which supported education for those returning from service with the armed forces, and the application of new technology (Fowler 1987, Gifford and Morris 1985, King 1998, McGimsey 1995 and 1998, McManamon 2000, Willey and Sabloff 1974, Wylie 2002). Crow notes that at this time there was also “a marked expansion” of the field of art history as “within the elite universities, the increasing ease and frequency of overseas travel had begun to stimulate a need for training in the history and meaning of significant European monuments” (2006, 76). Laws and regulations such as the Federal Aid Highway Acts of 1956 and 1958 and the Reservoir Salvage Act of 1960 “increased the flow of funding for archaeological excavation to federal highway and reservoir projects” and many state and federal agencies turned to universities and museums for support (Roberts et al. 2004, 9).

This period of professional growth for archaeology in the 1950s also saw the beginnings of conservation as a profession through the development of institutions in support of its work. In 1950, The International Institute for the Conservation of Historic and Artistic Works (IIC) was formed in London to organize individual and institutional conservation specialists. The organization included object and architectural conservators and, perhaps to highlight this fact, it changed its name in 1959 from The International Institute for the Conservation of Museum Objects to its present form (Stanley-Price 2003). In 1952, IIC took over publication of the Fogg Museum’s *Technical Studies in the Fine Arts*. With the move from the US to the UK, the title changed to *Studies in Conservation*, and a reference to “fine art” was no longer explicit in the title.

Another important institution established in the 1950s was the “Rome Centre” or the International Centre for the Study of the Preservation and Restoration of Cultural
Property (ICCROM). Founded in 1956, its mandate was to address the needs of all forms of cultural property, including issues involving the conservation of museum collections as well as those involving archaeological sites (Stanley-Price 2003).

Another milestone for conservation in 1956 was the appearance of H. J. Plenderleith’s book, *The Conservation of Antiquities and Works of Art: Treatment, Repair, and Restoration*, which “has been of immense importance in both the general field of conservation and in archaeology” (Caldararo 1987, 88).

Although archaeology had been recognized as a profession by academia and those in government for several decades, increasing numbers of excavation projects in the 1950s brought the topic of professionalism to the attention of the SAA. Wylie notes that the pressure to professionalize, became an explicit focus of debate within the SAA by 1954, when the post-war expansion of graduate training and employment in archaeology led some members to urge the society to establish a system by which archaeologists employed in increasingly diverse settings could be held accountable for minimal levels of training and standards of practice...however there was strong countervailing sentiment that the SAA should not undertake to ‘define the difference between professional and nonprofessional (amateur) archaeologists’ (Wylie 2002, 231 citing McGimsey 1995, 11).

However, by 1961, SAA published the *Four Statements for Archaeology*, which defined archaeology as “a branch of the science of anthropology concerned with the reconstruction of past human life and culture” whose “primary data lie in material objects and their relationships” and the value of these objects lies in “their status as documents”. The aim was to preserve “all recoverable information” for further study (Wylie 2002, 231 citing Champe 1961 et al.). Wylie goes on to show that the defining characteristics of an archaeologist of the time were not related to formal training, but rather a “commitment to scientific goals and standards of practice” (2002, 231).

Meanwhile, the focus for conservation was on a need for formal, specialized training. In 1958, London’s Institute of Archaeology was moved to a new building, and shortly thereafter, a new curriculum was developed by Henry Hodges and Ione Gedye to provide “museum technicians” with a wider role. Hodges described their vision:
If they were to work alongside archaeologists, they would have to know something about archaeology; if they were to work with many different materials, they should have some understanding of those materials and how objects had been fabricated; if they were to halt deterioration of those objects, they must have some mastery of the causes of corrosion and decay; and with all this would have to become useful practitioners (Hodges 1987, 20).

To help foster this broad vision, the Institute’s Technical Department was renamed the Conservation Department, and the single-year program was extended to a two-year period of coursework resulting in a diploma.

In the US, The Belmont Report highlighted the fact that most conservators were trained in Europe. Only one program, established in 1960, existed at the Institute of Fine Arts, New York University. According to a personal narrative (Merrill 1990), conservators then routinely known as restorers, were trained over a lengthy period of time by apprenticeship...there were only a handful of museum conservation facilities between New York and Los Angeles. In small museums, the treatment of the collection was entrusted to either the lowest paid member of the staff, or the highest paid – depending on their interest, or for expediency...American paintings were regularly conserved by the local “artists-cum-framer”...historical objects were often considered “common place” (Merrill 1990, 171).

Meanwhile, a milestone was marked in archaeological fieldwork as dominant ideologies in North American archaeology shifted toward new theoretical approaches. In 1968, Lewis Binford published New Perspectives in Archaeology, which proposed that archaeological reasoning should be based on an explicit framework of logical argument open to testing (Renfrew and Bahn 1996). This approach sought to explain rather than describe through generalizations:

In doing this they sought to avoid the rather vague talk of the “influences” of one culture upon another, but rather to analyze a culture as a system which could be broken down to subsystems. This led them to study subsistence in is own right, and technology, and the social subsystem, and the ideological subsystem, and trade and demography and so forth, with much less emphasis on artifact typology and classification (Renfrew and Bahn 1996, 37).
Almost simultaneously, David L. Clarke published *Analytical Archaeology*, in which he applied new concepts from architecture, geography, and ecology at the level of the site and region (ibid.).

King (1998) suggests that the rise of this new ideology impacted ideas of preservation through a focus on settlement systems and small groups of sites, which brought attention to regional preservation issues. Another impact on conservation was the beginning of two sub-disciplines within archaeology that have been more closely aligned with archaeological conservation in the US – historic archaeology, and underwater archaeology. According to King (ibid.), interests in historic archaeology grew from the interest of “New Archaeology” (also described as processual archaeology) in the spatial relationships within “historic districts”. He also claims that the introduction of the hypothetical-deductive approach to archaeology also inspired new approaches to the study of historic structures, which had previously been limited to details about reconstruction. With the application of this methodology and the use of new technology, underwater archaeology also became a “science”, due to the work of archaeologists such as George Bass (1966 and 1983).

Johnson (1993) believes that archaeologists from these sub-disciplines recognized a need for specialist expertise because finds from historic and underwater sites noticeably deteriorate quickly. However, these finds may have also been viewed by western collectors as more valuable and aesthetically pleasing and therefore worthy of special care and analysis. Meanwhile, conservators views toward archaeological objects may have been influenced by such works as *Teoria del Restauro* published in 1963 by Cesare Brandi. According to Brandi, archaeological “ruins” were fragments “that have lost their original function and aesthetics, and therefore can not be restored because…unity can not be recovered… [S]ince archaeology deals with remains and ruins…no treatment or reconstruction should be considered” (Vacarro 1996).
Brandi’s influence as the first director of the Istituto del Restauro in Rome was felt in 1965 at an international conference of restoration architects in Venice, which produced the Venice Charter, known for its emphasis on “respect for materials and aesthetic ideals of the past” (Caple 2000, 131).

During the same year, UNESCO’s International Committee on Monuments and Sites (ICOMOS) was formed to coordinate projects and organize conferences on the conservation and management of archaeological sites (Matero et al. 1998, 134).

As a result of the redevelopment boom, new legislation was passed in 1966 including the Department of Transportation Act and the National Historic Preservation Act (NHPA), which strengthened ties between archaeology, historic preservation, and environmentalism in the US (King 1987, 236). According to Fowler, the preservation movement "adopted a view of the cultural environment as a living organism, requiring care and nurturing to maintain its vitality" (1987, 41). The “Section 106 process” of the NHPA requires federal agencies involved with projects impacting historic properties to identify properties that could be impacted, evaluate their significance, assess the nature of impacts on the environment, consult with preservation experts to mitigate impacts, and agree with decisions of the Advisory Council before proceeding (Fowler 1987, 53). In 1969, the National Environmental Policy Act (NEPA) was passed and in response “there was an explosion of archaeological undertakings for all federal and state agencies” (Roberts et al. 2004, 10).

While the interests of archaeologists and historic preservationists were beginning to converge during the 1960s in the US, interest in field conservation for pre-colonial objects did not. The first degree-granting graduate level conservation program in the US began in 1960; however, the curriculum was dedicated to the fine arts. Although a conservation manual for American archaeologists was published in 1963 by Bennie Keel,

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4 Although the phrase “historic properties” is used, it includes protection for pre-colonial sites. The Act has been amended seven times, most significantly in 1976 and 1980, and there have been recent attempts by Congress to diminish its authority.
its focus was on collections housed under museum or university storage conditions (Calderaro 1987).

The next major milestone for American archaeology has been considered by some as an “estrangement” from the historic preservation movement (King 1987, 241). The 1974 Archaeological and Historic Preservation Act (AHPA, also known as the Moss-Bennett Act) extended provisions for the protection of sites to all forms of federally assisted and federally licensed projects. However it did not include criteria from the 1966 National Historic Preservation Act for measures of archaeological significance, nor did it provide a role for the State Historic Preservation Officer. Notably, it was concerned with “mitigating losses rather than requiring alternative projects and designs to avoid loss” (Fowler 1987, 57).

As this divide between archaeologists and the historic preservation movement was occurring, objects conservation became more professionalized through the growth of formal graduate-level training programs and the rise of professional organizations. In 1970, the New York State Historical Association and State University at Oneonta created a three-year graduate program toward a Master of Art degree and a certificate for the conservation of historic and artistic works in Cooperstown, New York (now part of the State University of New York, Buffalo State College). Four years later, the Winterthur Museum collaborated with the University of Delaware to create another three-year program, in this case toward a Master of Science degree and certificate in conservation (Stoner 1992). A Master of Art Conservation Program at Queen’s University, in Kingston, Ontario was also established as were several regional centres across Canada (Calderaro 1987). George Washington University also offered a program in the conservation of archaeological and ethnographic conservation from the mid 1970s to the early 1980s. Although the Cooperstown and Queen’s University programs offered specializations in objects conservation, neither program offered extensive training specifically with archaeological material at the time. In the UK, the Institute of
Archaeology started a three year BSc degree course in conservation in 1974 (Pye 1992), and similar courses were established at Cardiff and Durham by graduates of the Institute of Archaeology (Johnson 1993).

One indicator of the growth of the conservation profession during this time is that regional group membership in the International Institute for the Conservation of Historic and Artistic Works (IIC) had become large enough to support separate organizations. The American Group of the IIC incorporated in 1972 and later became the American Institute for the Conservation of Historic and Artistic Works (AIC). Its Bulletin, which began in 1960, became the Journal of the AIC in 1978. In 1979, the UK Group of the IIC incorporated separately and continued The Conservator, which had been published since 1977.

As conservation was beginning its period of growth, a schism between academic archaeology and Cultural Resource Management (CRM) in the US was also beginning. For example, at a 1973 conference in the Southwest, "field reports were organized under the headings of field schools, sponsored and private research, and contract research. The contract session included nearly two-thirds as many presentations as the other two sessions combined" (Roberts, et al. 2004, 11).

Perhaps CRM’s perceived internal threat to professional identity sparked a need to establish boundaries between archaeology and historic preservation through support of separate legislation for archaeological resources on one hand and historic preservation on the other. The 1979 Archaeological Resources Protection Act (ARPA) established stricter requirements for granting excavation permits and extended protection to historic shipwrecks. It also required that excavations create repositories for resources and records that were designated as the property of the federal government. In 1980, Section 110f, a major amendment to the 1966 National Historic Preservation Act, also set higher standards of protection for archaeological sites. It directed federal agencies “to the maximum extent possible, undertake such planning and actions as may be necessary to
minimize harm" to National Historic Landmarks. Of particular importance, it expanded the activities of National Park Service to manage a range of activities involving the protection of sites, including the development of regional conservation centres.

In spite of these federal laws, archaeological sites and the objects from them were still not protected on private lands in the US. As a consequence, several states passed their own legislation.

On the international level, the 1979 Burra Charter, drafted under the auspices of ICOMOS Australia, introduced concepts which would impact the practice of archaeology and historic preservation. As Burman (1997) notes, the charter differed from all others before it in many ways. It introduced the idea of a focus on “place” rather than on a single building or monument. The charter also defined conservation broadly as “all the processes of looking after a place so as to retain its cultural significance”, including maintenance, preservation, restoration, reconstruction, and adaptation or a combination of these activities. Interdisciplinary approaches to study and safeguard sites and monuments including traditional techniques were advocated, and the charter defined cultural significance as “aesthetic, historic, scientific or social value for the past, present or future generations”. The charter was also notable in very pragmatic ways because it included three sets of guidelines; how to establish cultural significance, how to define conservation policy and implement it, and procedures for undertaking studies and reports (ibid.).

The Burra Charter may have had greater influence on the preservation of sites than on the conservation of archaeological objects. However, legislation passed ten years later in the US has had lasting impacts on archaeologists, conservators, and indigenous communities.

In 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) became law, and “NAGPRA did for human burials on federal lands what the state laws did for those on private lands — forbade unauthorized excavations” (O’Brien et

5 However, other properties were excluded.
The law also confirmed indigenous ownership of recovered artefacts on federal and tribal lands and established a repatriation process. All federal agencies and museums receiving federal funding were required to conduct two inventories of their collections (NPS 2006). The purpose of the first inventory was to summarize all unassociated funerary objects, sacred objects, or objects of cultural patrimony, and provide this information to the public by 1993. Two years later, a second inventory was mandated with the objective to list all human remains and associated funerary items and to establish "lineal descent and cultural affiliation". In many cases, the latter requirement was particularly challenging since cultural affiliation could be disputed. Also an issue was that these mandates were not initially accompanied by federal funds; therefore, deadlines were extended several times. Nevertheless, NAGPRA motivated many museums to complete inventories of their collections. It also promoted dialog between institutions and descendant communities, although according to many, it is limited as a method of dispute resolution (Hall and Wolfley 2003, Nafziger and Dobkins 1999).

Respect for cultural and heritage diversity was also addressed in the Nara Document on Authenticity prepared at a meeting held in Nara, Japan in 1994 (Jokilehto 1999). According to Burman (1997, 284), the document also redefined conservation to include "all operations designed to understand a property, know its history and meaning, ensure its material safeguard and, if required, its restoration and enhancement".

The 1980s and 1990s represented diversification and specialization for archaeology and conservation. During this period, archaeologists began to borrow from various theoretical approaches including post modernist architectural theory, literary studies, and social and philosophical disciplines such as feminism and neo-Marxism (Renfrew and Bahn 1996). In conservation, theoretical diversity and specialization of expertise was reflected in the number and types of professional organizations that began during this time. For instance, Stanley-Price (2003) notes that several new International Scientific Committees were formed within ICOMOS on such topics as Rock Art, Historic

By 1994, 453 training programs with 47 courses in archaeological conservation and 14 other courses with site management in the curricula existed (Matero et al. 1998). Notably most were in the UK.

From the 1990s to the present there have been many efforts to develop trade organizations and unions for archaeologists, as well as accreditation programs for archaeologists and conservators. In 1991, archaeologists in the US launched United Archaeological Field Technicians (UAFT), a group affiliated with the International Union of Operating Engineers of the AFL-CIO. Although the group published a handbook in 1997 (UAFT 1997), and grew to include 500 members (estimated by the group as one-fourth of the workforce in 1997), by 2006 it had ceased operation. In the UK, a Qualification in Archaeological Practice was recently launched by the Institute of Field Archaeologists (IFA), which will eventually be structured around National Occupational Standards (IFA 2007).

The American Cultural Resources Association (ACRA) was incorporated in 1995 to “promote the professional, ethical and business practices of the cultural resources industry, including all of its affiliated disciplines, for the benefit of the resources, the public, and the members of the association” (ACRA 2007). The organization’s website claims that “the cultural resources industry in the United States is estimated to be made up of over 500 firms employing over 10,000 people” (ibid). One recent initiative of the organization was to argue against attempts by Congress to weaken the National Historic Preservation Act.

Accreditation has been a subject of much debate among the conservation community in the US since the earliest years of the AIC (Keck 1971). Although programs have already been planned and established in Canada (Colby-Stothart et al. 1996) and the
UK (Henderson and Dollery 2000, Hinchcliffe and Spreadbury 1998, ICON 2007), the
effort to implement such an initiative in the US is currently in the preliminary stages
(Chaffee 2007).

2.4 Summary and Conclusions

This chapter shows how the fields of archaeology and archaeological conservation
have converged and diverged since the 18th century. Although both grew from beginnings
in antiquarianism, archaeology became a museum, then university-based discipline early
in the 20th century, and since that time, one of its defining features has always been its
“identification as a scientific enterprise” (Wylie 2002).

Conservation, as a recognized discipline, has a much more recent history, with the
first formal post graduate-level training programs appearing in the 1960s and 1970s.
Nevertheless, conservation scholars often trace the beginnings of archaeological
conservation to the 19th century and the work of archaeologists such as Flinders Petrie and
chemists such as Sir Humphry Davy and Friderich Rathgen.

Many scholars have shown that in order for disciplines to grow, they must
distinguish themselves from others with a claim to unique and expert knowledge (Abbott
field” could claim unique knowledge through the experience of seeing objects in context,
an experience that in most cases could not later be shared, particularly if context was not
documented. In the lab, analysis performed by chemists and archaeologists was separated
from tasks associated with less discretionary tasks such as repair and storage. This
separation of interpretation from “caretaking” was one way archaeology could claim
expert knowledge as a distinct discipline.

In the US, for objects conservators, this separation is significant. However,
archaologicaological conservators who specialize in the built environment may not find
themselves as far removed from interpretation in some types of archaeological research,
and in fact claim that "archaeological site conservation is now considered a specialized area of architectural or cultural heritage conservation" (Matero et al. 1998, 134).

We will see in the next chapter how the institutions these disciplines have created serve to shape their identities, and how changes in society at large are impacting the practice of both professions in similar ways.
Chapter 3 – Communities of Practice

A profession is defined not only by its historical legacy but also by the social institutions it creates. These institutions help to produce “communities of practice” which are defined through a “shared repertoire of communal resources — routines, sensibilities, artefacts, vocabulary, styles, etc. that members have developed over time” (Wenger 1998, 2).

Traweek (1988, 7 citing Marcus and Clifford 1986) describes four areas of community life addressed in many ethnographic studies:

- the development cycle – how the group transfers skills, values, and knowledge to novices, and the stages of life and attributes of each stage;
- ecology – means of subsistence, the supporting environment, and the tools required for this enterprise;
- social organization – how the group structures itself in order to work, form factions, maintain and resolve conflicts, and exchange goods and information;
- cosmology – systems of knowledge, skills, and beliefs about what is valued and what is denigrated.

In her study of the professional life of scientists, Traweek translates these domains into discussions of the stages of professional development, workplace settings, skills considered necessary to become a competent member of the profession, and material culture. In the sections to follow, I will borrow Traweek’s domains to discuss and compare archaeology and conservation as communities of practice.

3.1 Stages in Professional Development

According to a study commissioned by English Heritage on behalf of the Members of the Archaeology Training Forum, “standard entry routes into full membership of the professions generally involve some combination of academic qualification and work experience” (John Stevens Associates 1999, 12). This could
include completing an accredited degree with “substantial vocational content”, or obtaining a degree that requires equivalent work experience. However, the study also notes that some students complete a first degree with a general education in a related subject and no vocational content, and then continue on to a postgraduate program. According to a UK training survey (Chitty 1999), 70% of the archaeologists started working in archaeology with a degree in archaeology, while 22% began with a degree in another subject. An additional 5% of those surveyed entered the workforce with a diploma, and 3% began with a certificate.

In the US, students do not receive formal vocational instruction as part of an undergraduate degree. However, students can specialize in archaeological topics within academic disciplines such as anthropology, art history, history, geography, architecture, or classics. Few colleges or universities grant undergraduate degrees in archaeology\(^6\), and although the image of “the excavator” is invoked at the mention of the topic, it is possible to graduate from a formal academic program in archaeology without any experience in the field.

Informal training in excavation techniques is common in archaeology, and novices often gain experience by volunteering on a project or as a paid crewmember assigned to low-skilled tasks. The Chitty report (1999, 30) noted that 70% of the UK archaeologists surveyed worked as volunteers or trainees in a field project before starting work in archaeology. It is possible to become very skilled as an excavator and be relatively regularly employed as such without having completed a formal academic program. Nevertheless, opportunities for advancement, project management, or active involvement with interpretation are usually limited (Aitchison 1999, Hinton 1999) and this may also be the case for archaeologists with undergraduate degrees (Wilson 2001). Many projects take on volunteers or high school students, although some consider this tradition to

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\(^6\) To my knowledge, Boston University and George Washington University are the only major academic institutions in the US to do so, and these are relatively recent programs. However, several small technical colleges have begun to develop programs for Archaeological Technicians (Wakeman 2004).
de-professionalize the discipline. However, these fears may be allayed through a new Qualification in Archaeological Practice which is soon to be launched (Regan 2007).

For conservators, the first step in a professional career now involves an undergraduate degree, although the community recognizes that “some highly qualified, competent conservation professionals may not have undergraduate degrees” (AIC 2005, 5). An American Institute of Conservation (AIC) survey in 1995 showed that “over ¼ of the fellows as well as ¼ of associates and professional associates, learned by apprenticeship”7 (McCready 1995). In 1999, the Conservation Committee of the International Council of Museums (ICOM-CC) found “a fairly even distribution between self training, apprenticeship, and a number of levels of academic training” (Staniforth 2000, [5]).

As with archaeology, conservation is not offered as a concentration within US undergraduate programs. However, courses may occasionally be available at universities with museum studies and anthropology programs (Corfield 2007, Mathias 1996, UCLA 2008). Although more common than in the US, opportunities to learn field conservation are also rare in England and Scandinavia (Sigurdardóttir 2006, Figure 3.1.1).

![Figure 3.1.1 Number and type of conservation programs offered by twenty-two universities in England and Scandinavia (Source: Sigurdardóttir 2006, 222)](image)

7 AIC has three membership categories: Fellow, Professional Associates, and Associate. Fellows are professional conservators, scientists and educators who have been endorsed by five other Fellows. Professional Associates are “able through training, knowledge or professional experience, to further the work of conservation...” and have been endorsed by three Fellows or Professional Associates. An Associate is “any person who shall have shown an interest in the purposes for which the AIC is organized.
The second phase of a professional career in archaeology usually involves completing an advanced degree. According to a survey of members of the Society for American Archaeology (SAA) (Zeder 1997), as of 1996, most American archaeologists held PhDs (60%)\(^8\). According to the Chitty report (1999, 30), 19% of the archaeologists surveyed in the UK entered the workforce with a postgraduate research degree (PhD or MPhil), and 26% began their career with postgraduate taught degrees (MA or MSc). The trend to seek a PhD appears to be rapidly changing in the US, particularly among young males, who are now more frequently choosing to terminate their studies at the master’s degree level. Zeder (1997, 207) believes this reflects greater opportunities for employment in the private sector where archaeologists with a master’s degree “seem to fare as well as those with PhDs, perhaps better”. Another factor that may account for this trend is that the average length of time for completing an advanced degree in the US is 6 to 13 years. As Zeder notes:

> It would seem an inescapable conclusion that the time taken to obtain advanced degrees in archaeology has seen a quantum leap over the last few decades. Even students who are more or less continuously enrolled in graduate programs are taking as much as twice as long to complete graduate degrees as they were 20 years ago. Today’s entry level master’s graduate is well into his or her 30s, and the newly minted PhD is likely to be pushing 40 (Zeder 1997, 36).

During graduate (or post-graduate) level study, archaeologists often specialize by geographic area, time period, or according to interest in specific analytical or methodological approaches. The student’s area of specialization may often align with the student’s graduate committee chair or advisor. In some instances the student may chose the university because of the expertise of the faculty, or in other cases the student may become part of the faculty member’s project.

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\(^8\) As Zeder points out, however, the survey does not represent the profession as a whole, only the membership of the SAA.
Most graduate programs for archaeologists in the US prepare students for careers in academia and museums in spite of the fact that opportunities for employment in this sector are diminishing (Zeder 1997). According to Wilson (2001a), most archaeologists in the private or public sector “learned their craft after leaving academia”.

Although advanced degrees in conservation are now considered standard, “there are many highly skilled and competent conservators who have not been trained through a graduate training program” (AIC 2005, 5). In 1995, AIC reported that two thirds of the fellows and professional associates had a graduate degree.

However, conservators new to the field would find a career path difficult if not impossible without an MA or MSc degree. PhDs are relatively rare. Most conservation professionals with a PhD are conservation scientists who have come to the field from other disciplines. As Price noted in 1992, “few of today’s conservation scientists left school with a clear determination to enter the field, and most find themselves in it because their careers gradually unfolded in that direction” (Price 1992, 18). Eight years later, Simon (2000, 85) stated that “the field of conservation science is still not integrated into academic structures”. Other conservation professionals with PhDs have come from the field of Art History, Anthropology, Architecture, and Archaeology. Only two graduate programs in the US offer PhDs in conservation, and in the early 1990s the average student age in one program was 40 (Stoner 1992).

Traweek (1988) identifies a third phase of professional development that serves to ease the transition from student to professional. For archaeologists choosing an academic career path, such a transition can sometimes be found through lectureships or post-doctoral fellowships. Such experience provides the opportunity for novice professionals to work closely with those who are more seasoned and gain credibility as having “expert knowledge”. For archaeologists working in the public or private sector, a mechanism for

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9 There are currently no available statistics to verify the disciplinary background of conservation professionals with PhDs. These statements, therefore, are based largely on anecdotal evidence.
such a transition may take the form of a position as a junior-level project director (NPS 2006) or work in a Cultural Resource Management (CRM) firm.

In conservation, postdoctoral positions are rare, although they are perhaps more common for conservation scientists. The transition from student to professional more commonly takes the form of an internship, which may not hold the same status as a postdoctoral position since interns are less likely to be allowed self-direction.

In academia, achieving tenure or a professorship represents a fourth stage, and the years preceding or immediately succeeding this milestone may represent the most productive years of their scholarship (Shott 2004, 35).

The fifth stage of professional development described by Traweek is “statesman”. At this step, professionals have established a standing in the field based on such factors as length of time in a leadership role within an organization, the number and quality of publications, or work closely allied with other statesmen. They have developed essential skills over years of experience, but may no longer “do” archaeology or conservation. Instead they may recruit students, get funding, and “attend to the public understanding of their discipline” (1988, 101).

3.2 Workplace Settings

As Zeder notes, the discipline of American archaeology is undergoing a period of profound transformation. At the heart of this transformation is a major restructuring in archaeological employment caused by the growth of public, and especially, private sector archaeology that is challenging the long-standing status quo of archaeological practice in academia and museums, as well as reshaping almost every aspect of American archaeology (Zeder 1997, 45).

This shift is reflected in four workplace settings: academia, government, museums, and the private sector. A survey undertaken in 1997 indicated that most
archaeologists in the US worked in an academic setting (35%)\textsuperscript{10}, with the second highest figure representing employment in government agencies (23%). Archaeologists working in the private sector accounted for 18% of those surveyed, and only 8% worked in museums. Respondents listing employment outside of archaeology but in related fields totalled 4%. Five percent worked less than half of their work week in one of these settings. Using similar employment categories for the UK (Aitchison 1999, 6)\textsuperscript{11}, most archaeologists (38%) appear to work in the private sector, followed by government (19%), museums (18%), and academia (15%). Ten percent were listed as “other”. Five percent worked as archaeologists part-time in one of these sectors.

Although as of 1997 most archaeologists in the US worked in academia, Zeder notes that the private sector is having an impact on every work setting:

Private sector archaeology has, over the last 10 to 20 years, become a major force in American archaeology. Private sector archaeology employs an increasingly large proportion of the archaeological workforce, it is the source of an enormous volume of archaeological literature, and it draws an exponentially larger amount of outside funding for its support than that applied to the support of more traditional kinds of archaeological research. Moreover, though the private sector does the lion’s share of the cultural resource management work conducted in America, we have seen that all employment sectors are increasingly engaged in this kind of work. In all sectors there are a number of CRM reports. In addition, all sectors draw more funds in support of cultural resource management activities than they acquire in support of traditional archaeological research (Zeder 1997, 207).

The Zeder survey reports that more American archaeologists are involved with writing than any other activity. Fieldwork is the second most common activity, followed by administration, teaching, and laboratory analysis. However, activities differ significantly by setting. According to Zeder, non-academic sectors, particularly those

\textsuperscript{10} Zeder notes that this profile may be overly representative of academic archaeology and therefore different from those of other archaeological organizations in the US. For instance, most members of the Society for Historic Archaeology (SHA) are employed by the government or represent the private sector. RPA’s (Register of Professional Archaeologists) membership is also largely representative of the private sector.

\textsuperscript{11} Independent consultants, archaeological contractors, archaeological societies, and other commercial organizations were combined as “private sector”, national heritage agencies, local government – other were combined as “government”, and national museums and local government – curators were combined as “museum”.

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archaeologists in government, spend more time in administrative activities. Activities of
government archaeologists also involve more contract review and public education, and
more time is spent excavating than in academic settings. In the US, government
Archaeologists appear to spend about the same amount of time writing publications and
performing laboratory analyses as do those in academia.

Activities for archaeologists working in museums are similar to those in
academia; they write for publication and proposals, and teaching is more common than in
government and the private sector. They differ from all other sectors through such
activities as collection management, archival research, repatriation, and preparation of
exhibits.

Archaeologists in the private sector spend more time writing publications and
conducting field work than those in any other setting. This is due, Zeder believes, to the
fact that funding for contracts is awarded through competitive bidding.

Activities vary not only by employment setting but also by country. Aitchison’s
survey (1999) of archaeologists in the UK describes “research” as the most common
activity, interpretation for the public appears second, followed by fieldwork,
management, documentary research and post excavation analysis, teaching, and
publishing. Nineteen percent of the organizations listed post-excavation conservation as
one of their activities.

In spite of these profiles of actual work performed, archaeologists in all settings in
the US preferred working in the field and laboratory and archival research, and least
preferred administrative work. The survey noted that most academics are performing
activities that are most preferred, followed by those working in museums. Zeder offers
the following explanation:

In the private sector, the kinds of field and laboratory analyses conducted
and the form of the final publication of this work are not fully determined
by the individual archaeologist’s interests or initiative. Rather, they are
dictated to a greater degree by both law and contractual arrangements,
and must be carried out in highly structured ways according to strictly
maintained schedules. The archaeology performed by government archaeologists is also likely to be subject to similar constraints. It would also seem that government archaeologists are more likely to monitor the work of other archaeologists in different work settings than they are to be actively pursuing their own research. In contrast, academic and museum based archaeologists are usually granted much more freedom to follow their own research interests, as well as greater flexibility in structuring the methods and schedule of their research (Zeder 1997, 72).

Conservators can also be found in settings related to academia, government, museums, and the private sector. As of 1998 in the UK, more than half of conservators work in private practice (Lester 2002). Shifts have been noted from work in institutional settings to the private sector however, the direction of this shift may vary by country. Staniforth (2000) cites the results of a 1999 survey of members of the Conservation Committee of the International Council of Museums (ICOM-CC), and notes that “in some countries there are fewer jobs [in institutions], but in others there are more” (ibid., [5]).

In the US, many full-time permanent positions in museums and government have become temporary contracted positions. Results of a survey on the condition and preservation needs of collections in every US state and territory showed that only 20% had dedicated, paid, full- or part-time staff for conservation (HP and IMLS 2005). The US Department of Labor seems to perceive this shift as a fait accompli since, according to its Occupational Outlook Handbook:

Conservators may work under contract to treat particular items, rather than as a regular employee of a museum or other institution. These conservators may work on their own as private contractors, or as an employee of a conservation laboratory which contracts their services to museums (USDL 2006, 3).

Perhaps in recognition of this trend, AIC has defined a document of “essential competencies” for conservation technicians (AIC 2005). Another indicator of this shift is the existence of the AIC’s Conservators in Private Practice Specialty Group, formed in 1986, whose “members serve a wide range of clients including private collectors, corporations, museums, universities, and governmental agencies” (CIPP 2006).

12 Their definition of staff is unclear. This probably included conservation technicians which, we will see, are considered support staff and not “professionals”.

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Since few conservation programs exist in the US, full-time employment in academia is rare, although conservators may teach part-time through other programs in related fields such as museum studies, art history, historic preservation, or anthropology, and they may also teach courses in other settings. A 1993 AIC survey showed that 67% of its membership taught conservation courses (Rosenberg 1993).

As in archaeology, the activities a conservator undertakes varies according to the work setting, and in some work settings these activities are changing. A UKIC survey in 1990 showed that 55% of a museum conservator’s time is spent on treatment, and 3% on environmental control and monitoring. An informal survey by Stoner (2001) indicated that a conservator’s time is increasingly spent on administrative tasks; however, treatment activities are still preferred.

3.3. “Essential Competencies”

According to Freidson (2001):

The two most general ideas underlying professionalism are the belief that certain work is so specialized as to be inaccessible to those lacking the required training and experience, and the belief that it cannot be standardized, rationalized or, as Abbott (1991, 22) puts it “commodified.” These distinctions are at the foundation of the social processes which establish the social and economic status of professional work...the degree and kind of specialization required by particular jobs, quite apart from their function, is widely used to establish their social, symbolic, and economic value and justify the degree of privilege and trust to which they are entitled (Freidson 2001, 17).

Freidson goes on to note two types of specializations which he characterizes as mechanical and discretionary. He defines mechanical specializations as those tasks organized to be relatively repetitive and therefore “minimize individual discretion”.

Discretionary specializations involve tasks dependant on judgment, or in other words, “the tasks and their outcome are believed to be so indeterminate...as to require attention
to the variation to be found in individual cases. Such work has the potential for innovation and creativity" (Freidson 2001, 23). Freidson also notes that skill implies knowledge as well as physical dexterity.

Some of these skills are codified formally in professional texts, while others are tacit and based on experience. The “tacit dimension” of scientific laboratory work and archaeological excavation has been described by several scholars (Berggren and Hodder 2003, Edgeworth, 1991, Gero 1996, Latour and Woolgar 1979, Knorr Cetina 1996 and 1999, Traweek 1988 and 1996, Woolgar 1982).

The fact that both professions are aware of the interrelationship between skills and tacit knowledge is made clear in their codes of ethics and surveys of the profession. In addition, organizations from both professions are in various stages of establishing formal mechanisms for certification (AIC 2005, Burchanan 2001, Colby-Stothart et al.1996, Dore 2004, Hinton 1999, Jeske 2002, Niquette 2001, Regan 2007). Documents describing these programs often use the phrase “essential competencies” rather than the term “skills” and include categories of knowledge required.

The Chitty report (1999, 4) defines work in archaeology as “the application of archaeological skills in conservation, education, fieldwork, collection management, interpretation, presentation, research and the overall management of historic environmental resources”. However, perceptions regarding necessary competencies appear to be divided between those working in academic settings and those who do not. According to Wilson, some in academia feel that the application of theory and method are important in order for archaeologists to “comprehend the impact archaeological work has on the discipline and the public” (Wilson 2001, 31). In the US, most archaeologists are academically trained and aspire to work in these settings; however, the reality is that most do not, and believe they are poorly prepared to work in the private sector (Zeder 1997).

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13 Freidson distinguishes his definitions from the “mental” vs. “manual” categories of Marx and others by discussing types of knowledge rather than class, etc.
Chitty and others (Chitty 1999, Hardy 1997) found this to be true in the UK as well. In a survey of training in the UK, archaeologists working in the private sector believed that the knowledge and skills that were most important related to management, computing, legislation and policy, and the ability to gather information regarding new archaeological research. The survey also found that “training in field skills are (sic) surprisingly low on the agenda” (Chitty 1999, 24).

The low status attributed to “field” skills is mirrored in a document from the US National Park Service (NPSTDD 2006) that lists essential competencies for archaeologists. The document describes the expected capabilities for three levels of archaeological staff – technicians (no degree required), entry-level archaeologists (bachelor’s degree equivalent), developmental level archaeologists (master’s degree equivalent) and full performance level (PhD equivalent). As the description of competencies moves from technician to “full performance”, fewer and fewer specific field skills are listed and more research, interpretive, and administrative competencies are described. Within these “field” skills, some are lower status than others. The US Department of Labor distinguishes archaeological technicians I, II, and III by many tasks including who cleans artefacts. Apparently cleaning is a task requiring few skills and little knowledge since it is included in the description for archaeological technicians at level I only.

In a recent document outlining “essential competencies” for conservators, AIC listed 12 essential areas of knowledge and skills:

- Terminology – an understanding of technical terms;
- History, ethics, and philosophy – the development of concepts, objectives of practice, ethics, and standards of conduct;
- Values and significance – the role of research and conservation practice in their preservation;
• History of technology of cultural heritage – qualities, attributes, features and history of cultural materials, and materials used to treat them access and use of cultural heritage;

• Access and use of cultural heritage – methods and strategies;

• Health and safety policies and regulations – procedures and regulations;

• Scientific principles and methods – methods governing scientific research;

• Processes of deterioration and change – factors and mechanisms causing chemical or physical damage, and methods to arrest, counteract, or impede destruction;

• Preventive care – forming and implementing policies and procedures;

• Examination methods – systematic procedures to examine structure, materials, and physical state including extent and causes of change and deterioration;

• Documentation – procedures, practices, and rationale for recording information from examination, research, analysis, and treatment;

• Treatment methods – tools, equipment, materials, practices, procedures, and methods to deliberately alter the chemical and/or physical characteristics of cultural heritage in order to achieve appropriate goals, such as prolonging the expected life of objects and helping to promote better understanding of their intrinsic properties and meaning.

The last area, treatment methods, is described as “the most crucial of all competencies, [in] that the full gamut of manual skills, knowledge, and experience of the conservator must combine to ensure the ongoing significance and long-term well being of an object” (AIC 2005, 6).

In the UK, the Professional Accreditation of Conservator-Restorers (PACR) has developed a scheme that assesses conservators against two sets of criteria: functional standards that describe the work carried out and professional criteria that describe the ethical and behavioural requirements of a conservator working at a professional level (Henderson and Dollery 2000, 90).

As do archaeologists, conservators clearly recognize the need for a broad range of knowledge and skills. In 2002, representatives from the Getty Conservation Institute (GCI) and AIC met to consider professional development for conservators. During one
discussion, participants formed groups to exchange views about the knowledge, skills, and other characteristics that would be essential for conservators in the future (GCI and AIC 2002). In one of the exercises, participants drew images of themselves (Figure 3.3.1) and created specific categories of knowledge considered important (Appendix 2).

![Figure 3.3.1 Conservators' views of themselves (Source: GCI and AIC 2002, 15)](image)

Foley lists the qualities and skills she looks for as an employer:

A sound knowledge base; the capacity to assess materials and situations; the ability to prioritize; research skills – i.e. the ability to use the literature and the network, and to “test” solutions; decision making – consideration of the implications of his/her actions; the ability to be observant; a command of recording techniques which are appropriate to the job; manual dexterity and the ability to use the senses – vision, smell, touch – in the process of conservation the capacity to use resources of time, materials, staff, and money sensibly...I do not subscribe to the myth that you can be “a good practical conservator” without sufficient intellectual skills...equally important but more difficult to measure are the necessary personal qualities...common sense; confidence – in measure enough to act when appropriate; humility – enough to test one’s actions against what’s known; professional awareness and the ability to communicate inside and outside the field; willingness to continuously update knowledge; openness to ideas; high ethical and professional standards (Foley 1992, 27).

Architectural conservators often work on archaeological sites and in some cases consider themselves archaeological conservators. In his 1999 article, Feilden recreated a list of 14 skills that an architectural conservator should be able to perform according to the International Council of Monuments and Sites (ICOMOS). Skills include the ability to

1) Read a monument and identify its emotional, cultural and use significance;
2) Understand the history and technology of a monument or site in order to define identity, plan, and interpretation;

3) Understand the setting, contents, and surroundings in relation to other buildings, gardens, landscapes;

4) Find and absorb all available sources of information;

5) Understand and analyze the behaviour of monuments as complex systems;

6) Diagnose intrinsic and extrinsic causes of decay;

7) Inspect and make reports understandable to non-specialists, illustrated with graphs, sketches and photography;

8) Know, understand, and apply UNESCO conventions, ICOMOS and other "recognized charters, regulations, and guidelines;"

9) Make balanced judgments based on shared ethical principles, accept responsibility for long-term welfare;

10) Recognize need to seek advice and "define areas of need of study by different specialists, e.g. wall paintings, sculpture and objects of artistic and historical value, and/or studies of materials and systems";

11) Give expert advice on maintenance, management, and policy for environmental protection and preservation;

12) Document and publish results;

13) Work in multi-disciplinary groups "using sound methods;"

14) Work with inhabitants, administrators, and planners to resolve conflict and develop strategies.

It is interesting to note that although Feilden listed archaeologists as professionals involved with the conservation of sites and monuments, in an accompanying chart (Appendix 3), he did not consider them to be involved in several of these activities including "working with inhabitants, administrators and planners to resolve conflicts and to develop conservation strategies appropriate to local needs, abilities and resources" (Feilden 1999, 9). According to a recent proposal for curriculum reform published by the Society for American Archaeology, archaeologists would disagree (Appendix 4).
3.4 Material Culture

The material objects created and used by members of a profession both impact and are impacted by ideology. For instance, tools available to the archaeologist may determine where the archaeologist looks for sites, and which sites are excavated. King (1998) states that from the 1960s to the 1980s archaeological research in the US shifted from site-specific studies to broader, regional topics due in part to technology – such tools as computers, aerial photography, false-colour infrared imagery, digitised imaging from satellites, and ground penetrating radar. He also notes that the development of underwater archaeology as a specialization was linked to the availability of underwater navigation systems, magnetometers, robot and manned submarines, side-scan sonar, and sub-bottom profilers.

In conservation, choices regarding what is conserved may depend on available tools and materials, as well as the costs involved in securing them. This is particularly the case in archaeological conservation where materials may not be locally available or are difficult to import. Developments in technology may also impact ideas about appropriate procedures and ethics. For instance, the development of synthetic polymers inspired treatments which have since been determined to be destructive, and consequently, views on concepts of reversibility have shifted (Giusti 2006, Oddy and Corroll 1999).

Use of such specialized equipment not only impacts the methods available and therefore interpretation but also establishes the discipline as a group with special expertise not available to others. In their work on the development of geology as a profession, O'Connor and Meadows (1976) discuss how the use of instrumentation in geology served to distinguish the professional from the amateur. They suggest that as geology became more “scientific” through the use of more specialized equipment, it became more difficult and expensive for amateurs to keep up with new developments in the field.
Many scholars have also shown that the material culture of the archaeology and conservation professions can also hold symbolic meaning (Clavir 2002, Edgeworth 1991, Gero 1991 and 1996, Hodder 2003). For instance, the trowel is often invoked as a symbol of archaeology, uniting the community through the common experience of excavation and everything that experience entails. One example is the engraved Marshalltown trowel offered for sale to members of the Society for American Archaeology in celebration of the organization’s 50th anniversary. Hodder (2003, 426) has also used the trowel as a metaphor for the process of interpretation.

Perhaps the closest equivalent symbols for modern conservators would be light microscopes, or perhaps gloves and lab coats. As Latour notes (1987), the mere presence of a microscope or use of lab coats signals that scientific practices are applied. Wearing gloves to handle objects implies knowledge of the material, an understanding of the causes of harm, and a concern for the object’s well being.

Ideology is most explicitly exchanged through a profession’s written texts, and many scholars have discussed the methods by which they convey implicit meanings regarding professional practice (Anspach 1998, Bourdieu 1988, Freedman and Adam 1996, Hyland 1997, Hodder 1989).

O’Connor and Meadows (1976) discuss the creation of geology as a profession by making knowledge less accessible to the general public. They believe this was accomplished in part by requiring standards of presentation in journal articles to become “impersonal” and calling for content to contain “original research of a non-trivial nature” (O’Connor and Meadows 1976, 83).

Hodder (1989) notes similar trends in writing styles from archaeological reports that were originally in the form of letters and large articles “full of actions of individuals” and “circumstances of recovery”, and eventually became a series of specialist reports. As a tradition Hodder traces to the 1960s, these reports are commonly organized into several sections – introduction, description, the find, discussion, and appendices.
The sequence of discovery, the contingent events of excavations, are reduced to one page of dry account. The main body of the report describes measurements and soils. Considerable space is devoted to defining archaeological terms which have little meaning except as categories... The 'interpretation' largely consists of describing parallels (Hodder 1989, 271).

3.5 Summary and Conclusions

Where do these communities of practice overlap, and where are they distinct?

At the beginning stages of professional development, they are currently very similar. Archaeologists and conservators are now expected to enter the profession through formal education. Although it is possible to be employed without formal training and become very skilled through experience, opportunities for advancement are limited.

As a second stage in professional development, advanced degrees in both disciplines appear to be shifting toward MA and MSc degrees. For archaeology in the US, this represents a relatively new trend away from the predominance of PhDs. For conservation, this is also a relatively new trend; however, it represents a shift away from informal training and apprenticeships. Conservation professionals with PhDs are still relatively uncommon, and most come to the profession from other disciplines.

Some archaeologists interpret the shift away from PhD-level education as a threat to "the archaeological record" and a fear that theory will be disregarded in favour of expediency (Wilson 2001). Some conservators consider a trend toward PhDs to be a threat to the value of skills and "hands-on" experience.

Therefore, one of the boundaries between archaeology and conservation in the US appears to involve the importance of the theoretical and philosophical versus the skilled and technical. According to relatively recent surveys (Zeder 1997), archaeologists still regard work in academic settings which require a PhD preferable, not withstanding that most jobs are in cultural resource management. Academic positions for conservators have always been rare, but the role of conservators is broadening. Nevertheless, informal surveys suggest that conservators prefer "bench-work" (Stoner 2001).
This divide may also reflect different views of self-determination and therefore perceptions concerning professionalism. For archaeologists, tasks perceived as technical appear to be low status since they are perceived to require oversight and preclude interpretation. In conservation, technical skills are so highly valued that conservators may be distinguishing themselves by what they do rather than what they know (Henderson and Dollery 2000).

This premise will be examined in chapters to follow, but before doing so, I will present a brief overview of the theoretical underpinnings and methodological approaches I drew upon for this study.
Chapter 4 — Previous Research

Before presenting the rest of my body of research, I will provide a brief overview of the theoretical context from which it stems. As we will see, my approach is based upon a composite of concepts from various disciplines and subdisciplines, each with a long tradition of scholarship. We will also see how studies of archaeological and conservation practice have turned from broad histories of method and theory to more specific and reflexive views.

4.1 The Theoretical Context


My investigation of archaeology and conservation as cultural communities extends anthropological concepts on the study of cultural change and diversity. I borrow from ethnographic traditions which centre on the discovery of what it means to be “human” to particular people in specific places and times. Ethnographic approaches
present local, situated views of culture by "documenting what people know, feel, and do in a way that situates those phenomena at specific times in the history of individual lives...[and focuses on] details impacting the social distribution of cognition, emotion, and behavior" (Handwerker 2001, 7). This view requires ethnographers to interact with the people they wish to understand, while recognizing that activities may be impacted by the presence of the observer (Lynch 1997, Silverman 2001).

My approach to ethnography draws from concepts of grounded theory (Glaser and Strauss 1967, Strauss 1987, Strauss and Corbin 1998) which, according to Star (1998), grew from symbolic interactionist sociology and American pragmatism of the "Chicago School" in the 1960s. Glaser describes grounded theory as "the systematic generation of theory from data" (1998, 12). The approach operates on the premise that research progresses inductively through a process of iteration and constant comparison in order to discover commonalities in the data which lead to emergent themes or concepts. In a sense, grounded theory is essentially a methodology, and as such, it is discussed further in Chapter 5.

To an extent, my work is based on concepts from linguistic anthropology, which assume that knowledge resides within the language people use and the way they use it. Duranti summarizes this view below:

By systematically recording native discourse, we find participants busy, not so much explaining themselves to the outsider-ethnographer, but — to borrow Moerman's (1988) apt metaphor — talking their culture: that is, making it happen for and with one another, through verbal interaction...a theory of culture can be expressed not only in the symbolic oppositions found in ritual performances or in the meta-statements about what counts and what doesn't count, or what is appropriate and what is not appropriate, but also in the words and turns exchanged among people while easing, arguing, instructing, gossiping, joking, or telling — rather, co-telling — narratives of personal significance (Duranti 1993, 215 citing Brenneis 1984, Briggs 1986, Haviland 1986 and 1991).

Research in linguistic anthropology and ethnographic methods is closely allied with studies in sociology on the production and transmission of social knowledge through
discourse. Many of the current approaches to this research can be traced to the works of Wittgenstein (1953) and others on the philosophy of language use and its relationship to the social world. Holstein and Gubrium (2000) have described the various approaches to the study of discourse as an interplay between two realms: discourse practice and discourse-in-practice. Both realms strive to “reveal the way language works in relation to what is taken to be real, evident, and significant in social life” (Holstein and Gubrium 2000, 94).

In studies of discourse practice, researchers concentrate on the means through which social knowledge is constructed using language. One strategy for doing so, an extension of the work of sociologist Erving Goffman (1959 and 1986), involves a focus on interaction. In this approach, known as ethnomethodology, everyday activities are recorded and examined in order to investigate how, through language, “complex, shared, taken for granted rule structures” (Garfinkel 1967, 255) are used in “constructing, testing, maintaining, altering, validating, questioning, defining an order together [author’s italics]” (Heritage 1988 citing Garfinkle 1952, 114). One type of an ethnomethodology is conversation analysis, which examines the specific sequences of the give-and-take of talk (Sacks 1984, Sacks et al. 1974, Schegloff 1991 and 1992). Some of these studies focus on the workplace: how activities are accomplished “through mutual attentiveness to what has to be done” (Sharrock and Hughes 2001, 6), and how knowledge is exchanged and transformed in the process (Brown and Duguid 1991, de Konnick 2003, Galison 1996, Hodson 1998, Holmes and Mara 2004, Nelson 1994, Scollon and Scollon 2003, White 1984).

In contrast to discourse practice, Holstein and Gubrium describe studies of discourse-in-practice as an examination of broader configurations of meaningful action, such as Foucault’s descriptions of the fluid nature of power in social interaction (Foucault 1972, 1980 and 1981). In other words, discourse practice addresses the “hows” of communication, while discourse-in-practice concerns the historical and cultural
“whats” -- the separate and distinct systems of understanding and usage which shift in juxtaposition through time (Holstein and Gubrium 2000).

My research also draws upon the ideas of Bourdieu (1977, 1998) regarding the manner in which the rules, values, and “dispositions” incorporated through our cultural history (the “habitus”) produce everyday practices. Important to this concept are notions of the use of “capital” within cultural fields. To Bourdieu, capital includes material as well as status and authority or “all the goods, material and symbolic...that present themselves as rare and worthy of being sought after in a particular social formation” (Webb et al. 2006 citing Harker et al. 1990, 1). Cultural fields are the contexts within which practices occur -- the institutions, rituals, rules, and conventions, which authorize discourses and actions. According to Bourdieu, cultural fields are not only formed by the interactions of institutions, rules, and practices, but also by groups and individuals who determine what the capital is and how it should be allocated. Cultural fields are dynamic, fluid, and impacted not only through practice and politics, but also through convergence with other fields. It is the “logic of practice” that enables these cultural fields to be negotiated. Bourdieu describes this logic in terms of an athlete’s “feel for the game”:

To master in a practical way the future of the game, is to have a sense of history of the game. While the bad player is off tempo, always to early or too late, the good player is the one who anticipates, who is ahead of the game (Bourdieu 1998, 80).

Scholars have explored the nature of this “logic of practice” in the fields of medicine, law, and science. Although scholarship on the history and philosophy of science has a long tradition, some of the earliest work on the practice of science in the modern era was done by Merton (1942). Drawing from the work of such scholars as Émile Durkheim, Max Weber, and Talcott Parsons, Merton described scientific practice in terms of a set of “norms” and values. According to Hess (1977, 56), the most important of these norms fall within four categories: 1) universalism — truth claims will be considered regardless of the race, nationality, or religion of the scientist; 2) communism —
results will be shared, and property rights will be recognized; 3) disinterestedness — one is accountable to one’s peers who will rigorously scrutinize the work; 4) organized scepticism — scrutiny will not be influenced by “outside” forces such as religion.

Merton’s norms have been critiqued as an ideology rather than a pervasive form of practice (Mulkay 1976), and more recently, scholars have taken different approaches. For instance, some researchers have examined scientific work in terms of social stratification created through processes described as “cumulative advantage/disadvantage” and “gatekeeping”. Theories of cumulative advantage argue that scientists with early successes build recognition and are therefore provided with better access to resources. In turn, these advantages lead to higher productivity and more recognition (Cole 1992, Long 1978, Menard 1971, Reskin 1978, Rossiter 1982). Gatekeeping theories describe the manner in which scientists are evaluated throughout their professional lives as they join and move through the workforce, are allocated resources, or when they publish (Crane 1967, Hargens 1988, Merton 1973, Long and McGinnness 1985). Other studies have described scientific practice in terms of “boundary-work” where scientists create and defend their autonomy (Jasanoff 1987, Mulkay and Gilbert 1982, Gieryn 1983 and 1999, Gieryn et al. 1985).

A related area of scholarship is the study of scientific knowledge that focuses on the theories, methods, and choices made in science and technology, rather than on science within an institutional context. Work on the social studies of knowledge can be traced to the 1920s and 1930s. However, contemporary approaches stem from the 1970s and the work of British scholars such as Michael Mulkay, Harry Collins, Barry Barnes, and David Bloor (Hess 1977). A particularly influential approach was Bloor’s “strong program” which outlined goals of research in terms of causality (explanation), symmetry (using the same type of cause to explain “true” and “false” science), impartiality, and reflexivity.
Critiques of the theory have centred on the concept of symmetry, which has often been interpreted as relativism.

Another influential strategy uses methods of observation to study the practice of science. Proponents of this branch of research have addressed such topics as the nature of replication and induction (Collins 1982, 1983), scientific observation and technology (Pinch 1985, Pinch and Bijker 1984), and peer-review (Travis and Collins 1991). A particular area of research has been described as “laboratory studies”. According to Hess (1977), the first wave of these studies appeared in the 1970s and 1980s and focused on what scientists actually do in the laboratory (Galison 1987, Knorr-Cetina 1982, Latour and Woolgar 1979, Lynch 1982 and 1985). A second wave in beginning in the 1990s took a turn toward science-as-practice (Mody 2005, Owen-Smith 2001, Pickering 1992 and 1995, Sims 2005), and science as a “social world” (Lenoir 1997, Longino 1990, Hilgartner 1992 and 2000, Star 1995 and 1999). These studies have addressed such topics as the manner in which research groups establish and maintain identities (Hackett 2005), variable meanings of “contamination” (Mody 2001), how views of science as a “masculine” activity have shaped research (Keller 1995), and notions of trust during scientific collaboration (Shrum et al. 2001).

Another concept relevant to my work is interdisciplinarity (Becher and Trowler 1989, Bennett 1954, Halpern 1992, Cummings and Kiesler 2005, Herring 1999, Lattuca 1996, Nissani 1997, Paxson 1996, Salter and Hearn 1996). According to Klein, “theories about interdisciplinarity are also theories about knowledge and culture” (1996, 10). Klein continues by stating that theories of the concept can be posited along a spectrum of argument from instrumentalism, or empirical problems at one end, and epistemological or theoretical problems on the other. As an empirical problem, interdisciplinarity is seen as borrowed tools and methods, while as an epistemic problem, it is the search for a unified knowledge. Klein (1996) describes this dichotomy through the metaphors of bridge building and restructuring. She notes that the most common form of interdisciplinarity is
bridge building which takes an applied form, such as the borrowing of quantitative methods. Restructuring is a less common form, and can change parts of a discipline through critiques of the prevailing structure. One example is the introduction of feminist approaches to archaeology.

A related concept is transdisciplinarity, which can be traced to the 1960s and 1970s and the writings of such scholars as Kuhn (1962), Jantsch (1972), Fried and Molnar (1978), and Pettman (1975). Philosopher of science Jürgen Mittelstrass, suggests a distinction between interdisciplinarity and transdisciplinarity:

While scientific co-operation means in general a readiness to co-operate in research, and thus interdisciplinarity in this sense means a concrete co-operation for some definite period, transdisciplinarity means that such co-operation results in a lasting and systematic order that alters the disciplinary order itself. Thus transdisciplinarity represents both a form of scientific research and one of scientific work...transdisciplinarity is a research and scientific principle, which is most effective where a merely disciplinary, or field specific, definition of problematic situations and solutions is impossible (Mittelstrass 2001, 497).

Klein (1998) suggests that concepts of transdisciplinarity are based on changes in knowledge production that involve “complexity, hybridity, non-linearity, reflexivity, and heterogeneity” and contribute theory, methods, and practice which falls outside of disciplinary or even interdisciplinary boundaries. In this view, knowledge creation is dynamic, and continues in “feedback loops”.

The Centre for Research on Transdisciplinarity (CIRET) has put forward principles in an international charter (Lima de Freitas and Nicolescu 1994) which have been critiqued as naively utopian. To Janz (1998, 4), “what is needed is a way of preserving the particularity of disciplinary knowledge while at the same time finding the underlying rationality”. Klein also argues that viewing the approach holistically reduces “all phenomena to one metaphor, theory, or ideology, [and] transdisciplinary schema risk becoming monolithic projects of closed systems” (Klein 1998, [1]). Most agree however, that the concept’s chief advantage is that it encourages dialogue and coalition building.
4.2 Studies of Archaeological Practice


Several of these studies address the nature of archaeological interpretation and ways that it can influence the course of political events, marginalize other potential stakeholders, or become skewed by assumptions relating to gender. For instance El-Haj (2001) and Zimmerman (2005) suggest that archaeological results have been interpreted in ways that justify the actions of those in political power. Meskell (2003) has addressed the consequences of archaeologists’ assumptions that local communities are disconnected from their past. Costin (1996) and Bodenhorn (1993) highlight the importance of considering gender and the division of labour in the archaeological record. Research has also focused on the manner in which archaeological tools are used to transform nature into analytic categories (Goodwin 2006), the complex interplay between the actions of archaeological instruments, human beings, and the media (Witmore 2004), or the objects archaeologists discover (Edgeworth 1991).


4.3 Studies of Conservation Practice

As in archaeology, many of the studies of conservation practice have concentrated on the history of the development of the field. Ethical concerns have been at the forefront of discussion since at least the 19th century, and concepts of theory and ethics remain closely intertwined today (Ashley-Smith 1982 and 1994, Bracker and Richmond 2006, Child 1994, Clavir 1993, Corfield 1988a, Jokilehto 1992, Lyons 2003, Malkogeorgou 2006, McGowan and LaRoche 1996, Price 2000a, Richmond 2005, Matero 1993 and...
2000, Sease 1998, von Imhoff 2004 to name but a few). For example, the Conservation Committee of the International Council of Museums (ICOM-CC) includes the Theory and History of Conservation-Restoration (THC-R) Working Group, where ethics is a prominent theme. The THC-R listed two projects as objectives for the 2003-2005: a compilation of oral histories, and a study of the history and development of conservation ethics. Current objectives include the compilation of a bibliography on the subject of ethics (te Marvelde et al. 2006).

Much of the scholarship on conservation practice draws from the philosophical views of architecture and art history, particularly concepts of aesthetics and authenticity. Architectural conservators often trace the beginning of theoretical discussion on these topics to debates on appropriate approaches to the restoration of monuments between Ruskin (1849) and Viollet-le-Duc (1866) in the 19th century. This, and similar controversies helped to influenced the development of various local and international resolutions and charters to protect cultural heritage, including the “manifesto” of the Society for the Protection of Ancient Buildings (Morris et al. 1877), recommendations of the 1904 Madrid Conference (Locke 1904), and the 1931 Athens Charter (Jokileto 1992).

Scholarship specific to archaeological conservation often describes the influence on the modern practice of techniques and approaches pioneered by chemists in the late 18th, 19th, and early-to-mid 20th centuries such as Sir Humphry Davy, Friderich Rathgen, Alfred Lucas, Alexander Scott, Harold Plenderleith, John Gettens, and John Stout (Caldararo 1987, Corfield 2007, Gilberg 1987, Riederer 1976, Gilberg and Vivian 2001). Studies have also chronicled the work of archaeologists who were influential in conservation practice such as Flinders Petrie and Albert Voss (Johnson 1993, Sease 2001).

Most paintings conservators believe that theories on modern practice began in 1963 with the publication of art historian Ceasare Brandi’s Teoria del Restauro (Brandi 1963). Brandi’s ideas emphasized consideration for an object’s aesthetic value and,
according to Basile (2005), invoked a “moral imperative” to protect works of fine art. However, according to Vaccaro, Brandi’s vision of conservation is difficult for some architectural and archaeological conservators to apply, since he considered “ruins” to be “fragments which have lost all traces of their original function and aesthetics...and no treatment should be considered except maintenance of the status quo” (Vaccaro 1996, 210).


As in archaeology, conservation has taken a reflexive turn, and several studies have addressed conservation practice within a social context. For instance, Miriam Clavir's research (2002) explored the ethical issues of conserving Native American collections from the Pacific Northwest and the tensions created when Western scientific values adopted by conservators conflict with traditional views of descendant communities. Cassman and Odegaard (2004) have described the legal and political environment of their work with the contested remains of the 9,000 year old Kennewick Man or Ancient One.

Although the list of studies and discussion on conservation practice is vast, only a few scholars have taken an in-depth ethnographic approach to examine what it is that conservators do during the course of everyday events. Among these are Brückle’s (2001) study of “looking”, van Saaze’s (2007) investigation of identity formation during the course of various museum activities, and the work of DiStefano et al. (2004) with a model for effective collaborative communication for training architectural conservators.

Perhaps the closest study to my own was done by Drysdale (1999) who used critical linguistics to examine three papers that appeared in the preprints of the 1994 conference of the International Institute for Conservation, Preventive Conservation Practice, Theory and Research (Roy and Smith 1994). Critical linguistics is a “language-ideological” approach which researchers use as a means for understanding the complexity of “the way that speakers, groups, and governments use languages – and their ideas about languages (author’s emphasis) – to create and negotiate those sociocultural worlds” (Kroskrity 2004, 512). In this instance, Drysdale examined papers presented by individuals from three different institutions: the Victoria & Albert Museum, The National Trust, and the Smithsonian Institution’s National Museum of the American Indian.
Drysdale concluded that the specific words the authors used reflected a tension between
the goal of the institutions to serve the public and the goal of the conservators to serve the
object:

Unlike medics with whom we carers for the cultural heritage are so often
compared, conservators tend to be housed not in institutions where our
discipline is the core activity (hospitals), but in museums or heritage
bodies where conservation is just one of the things that the organization
does. This may lead conservators to reinterpret the purpose of their own
institution in a way which is more acceptable to their preservation-focused
vision. They may also [tend] to lend their primary allegiance to the
professional bureaucracy rather than the corporate bureaucracy which
appears to pay them so little attention (Drysdale 1999, 165).

In some ways, my research is similar to Drysdale's in that it examines specific
words. However, in addition to what words were used, I focus on their context. That is,
my interest is in what the context of the discourse tells us. Therefore, unlike Drysdale, I
also examined spoken texts within the context of ethnographic data gathered during
participant observation. In addition, a particular focus of my research is the mechanism
for creating new knowledge during interaction.

4.4 Summary and Conclusions

Although these studies of archaeological and conservation practice take the
socially situated nature of knowledge as an assumption, none have yet explored how this
phenomena shapes their work together, or alternatively, how it can create barriers
between them. In the following chapters, I will describe how I have addressed this void
by using multiple forms of evidence to identify the borders and trading zones that these
communities of practice and the individuals within them create, but which also have been
created by the political and social institutions within which they work.
Chapter 5 — Methodology

With the theoretical foundations for my research in mind, let us now turn to the specific methods I used to collect and analyze data used to identify the boundaries and trading zones between archaeological and conservation practice. In the following sections, I will describe the qualitative and quantitative approaches I used to triangulate my findings through converging lines in inquiry (Tashakkori and Teddlie 1998, Yin 2003).

5.1 The Sample Population

Based on the assumptions that boundaries between disciplines are most visible where they intersect, and that a primary activity of archaeologists is fieldwork, my initial criteria for data collection was based on setting. That is, I chose to focus a majority of my observational data collection on archaeological and conservation practice in the field. This required me to identify archaeological projects that involved the active participation of conservators on site over extended periods of time. Since interaction between archaeologists and conservators in the field is relatively rare in American, terrestrial archaeology, the selection of archaeological projects to observe was opportunistic.

Of course, the most important criterion for the selection of sites was that the participants agree to be interviewed and observed. Understandably, not all archaeologists and conservators were enthusiastic about being watched while they performed their daily tasks. One archaeologist, who was a project director, described feeling as if he was “a bug under the microscope” and was not eager to allow my visit. Ultimately, he deferred his decision to the head conservator, who graciously consented. In another instance, I rescinded my request for a planned site visit when it became clear that I was placing the conservator in an uncomfortable situation.
Ultimately, three different archaeological projects met my criteria for selection. However, each project varied in the number of participants involved and the length of time I was able to spend observing activities. I will describe each of these three projects as a separate case, that is, as a set of phenomena within a bounded setting (Miles and Huberman 1994, 25). My research also included data from professional conferences and meetings, which I have combined as a fourth case, and I discuss the sample of conservation and archaeological literature as a fifth case.

5.1.1 Case One: An Archaeological Project in Southwest Asia

The primary case for data collection was a project in Southwest Asia under the leadership of an archaeologist trained in the UK but currently on the faculty of an American university. Seventeen participants were involved in observations and interviews from this project during two consecutive field seasons. Eleven were archaeologists and six were conservators. Eight of the participants were from the UK (47%), while five (29%) were from countries including Greece, Turkey, Serbia, Canada, and the Netherlands, and four (24%) were from the US. Thirteen participants were educated and trained in the UK (76%), while two held degrees from universities in the US, one was educated in Canada, and one was educated at a university in Serbia. A majority of the participants were female (61%).

Due to the restrictions of the project permit, my visit to the project in 2004 was limited to five days. However, I collected data over a period of 22 days during the 2005 field season. Seven of the archaeologists and two of the conservators were participants in my research during the first field season, and all but one of them was a participant during the second field season as well.

5.1.2 Case Two: An Archaeological Project in the Mediterranean Region

An opportunity to briefly observe activities at a site in the Mediterranean Region presented itself in 2004. The second case involved a project led by an American
archaeologist who was a faculty member at an American university and included a predominantly North American crew. My observations and interviews involved six participants; three archaeologists and three conservators. A majority of the participants were female (67%). Three of the participants were from the US where they also received their formal training and education, and three were from Canada. All of the participants who were Canadian were with the conservation team; two had completed the same conservation program at a Canadian university, and the third was preparing to enrol in a conservation program in the near future. I conducted interviews and observed activities over a period of five days at this site.

5.1.3 Case Three: An Archaeological Project in the US

In 2003, I collected data for a third case at an archaeological site located in the US and managed by the National Park Service. Observations at this site took place over a two-day period and involved the activities of six participants on the first day and the activities of four participants on the following day. On the first day, four of the participants were American archaeologists, one was a specialist with Geographical Information Systems (GIS) and one was a collections manager. Four of the participants were male and two were female. Activities on the second day involved American archaeologists trained and educated in the US, and one conservation scientist who received his education and training outside of the US. Two were males and two were females.

5.1.4 Case Four: Conferences and Meetings

In an effort to include observation of activities undertaken in more formal settings, I also focused my attention on professional conferences of archaeologists and conservators as a fourth case. In 2003, I collected data during technical and plenary sessions at an international archaeological conference, and a tour of a conservation laboratory for attendees of an American conservation conference. I also gathered data
from a special session organized by conservators at an American archaeology conference in 2004, and an annual meeting for American conservators held in 2004. In addition, I collected data from a 2005 conference on archaeological conservation at which papers were presented by both archaeologists and conservators. This sample of the research population was more evenly distributed by gender than the participants from the archaeological projects since 55% were female and 45% were male.

In total, the observation component of my research involved 44 participants: 25 archaeologists, 17 conservators, 1 GIS specialist, and 1 collection manager (Appendix 6). Half of the participants were from the US, nine were from the UK, four were Canadian, and two were South African. The remaining participants were from Greece, Turkey, Serbia, and the Netherlands, and the country of origin for two of the participants was unknown. A majority of the participants was female (65%).

5.1.5 Case Five: Written Texts

In addition to site and conference visits, I also gathered data from written texts including codes of ethics, articles from peer-reviewed journals, and for one archaeological project, diary entries of the field crew. Codes of ethics and guidelines for practice included those of the Society for American Archaeology (SAA), the Society for Historical Archaeology (SHA), the American Institute of Archaeology (AIA), the Institute of Field Archaeologists (IFA), the Register of Professional Archaeologists (RPA), the American Institute for Conservation (AIC), the Archaeological Section of the Institute for Conservation (ICON), and the Conservation Committee of the International Council of Museums (ICOM-CC) (Appendix 7).

Written texts incorporated into the quantitative analysis included 121 peer-reviewed articles of two conservation journals and two archaeology journals for the 2004 publication year. Although several journals cover topics related to archaeological conservation, I chose journals with a specific disciplinary focus since my objective was to
identify similarities and differences in disciplinary practice. Since a majority of the study participants were from the US and UK, I included one journal published in each country for each discipline. The journal articles analysed were from *Studies in Conservation* (published in the UK), the *Journal of the American Institute for Conservation of Historic and Artistic Works* (published in the US), *Antiquity* (published in the UK), and *American Antiquity* (published in the US). It should be noted that although these journals are published in the US and the UK, they vary in the extent to which they include authors and editorial board members from other countries. In fact, although published in the UK, *Studies in Conservation* is considered an international publication (Corfield 2007).

### 5.2 Methods of Data Collection

My methods for collecting data emerged from the theoretical approaches discussed in Chapter 4, and combine approaches commonly applied in ethnographic, anthropological, and sociological research. These methods involve participant observation, interviewing strategies, and a review of documents that the community itself considers significant.

#### 5.2.1 Participant Observation

Ethnography includes “processes and products of research that document what people know, feel, and do in a way that situates those phenomena at specific times in the history of individual lives...[and focuses on] details impacting the social distribution of cognition, emotion, and behaviour” (Handwerker 2001, 7). This approach requires the researcher to interact with the people they wish to understand, and one way to do so is to engage in activities (to the extent possible) along with the individuals and groups under study. During these activities, the researcher records general and specific observable activities and events.

Activities can be recorded during and/or after the event and there are advantages and disadvantages to each approach. With advances in recording technology, the use of
audio and video recorders has become commonplace. However, some participants may feel inhibited and uncomfortable with audio and video equipment within their range of sight. There has also been debate about the extent to which the presence of audio and video recorders changes the dynamics of the activities and interaction (Yin 2003 citing Becker 1958). Nevertheless, audio and video recordings ensure that data collection will be immediate and more complete, and that observations of interaction will be situated within the context of its setting. In addition, to the extent that recordings are archived appropriately, analysis of observations can be repeated (Shrum et al. 2005).

Some participants may prefer not to have notes taken in their presence, in which case the researcher must compile notes as soon as possible after the event and rely on memory.

The degree to which I used audio, video, or written notes varied from site to site, activity to activity, and according to the participants involved. In some instances, participants were uncomfortable with my presence in general; therefore, in these situations most of my observations were recorded by hand. This was the technique I used most often during observations of the archaeological projects in the Mediterranean Region and the US. In some circumstances, participants asked me to turn off my recording equipment, or I chose to do so without being asked because I sensed that the presence of my equipment was particularly intrusive. In many instances, the dynamics of the activities themselves meant that I was not able to organize my equipment quickly enough to capture an event. However, throughout the process of observation I relied on “jottings” in a small notebook that I used to produce field notes at the end of each day while events were still fresh in my memory.

I chose to use a relatively low-tech approach involving small, hand-held equipment in order to remain as unobtrusive as possible. Analog sound and video recordings were made with the aid of a Samsung MiniDV video recorder with an external
microphone, and a Sony mini-cassette voice recorder was used to capture public discussion during conference sessions.

5.2.2 Interviews

I also gathered data using informal, open-ended interviews (Appendix 8). Many of the participants in the interviews were also those that I was observing. Therefore, most interviews were undertaken at the archaeological site, and often this was while the participant was engaged in a specific activity. For instance, while conservators were in the process of consolidating mud brick walls or cleaning objects in the lab, I talked with them about their profession and its practice. Similarly, I was able to talk with archaeologists about their views of their professional practice while they were washing pottery sherds or while I was helping them collect and package samples for analysis.

In total, I conducted interviews with 17 participants, a majority of whom were female (65%). Six participants were from the archaeological project described as Case One, and five were from the project described as Case Two. I also held interviews with two conservators and one archaeologist at various workplaces off site, and with three conservators at conferences. The length of the interviews ranged from approximately 20 minutes to several hours.

5.3 Methods of Data Analysis

As discussed in Chapter 4, there are many possible approaches to the analysis of data gathered through anthropological, sociological, or ethnographic perspectives. I chose to use a strategy that combined qualitative analysis involving general observations from the field with a quantitative analysis of written and verbal texts. My general approach to the data analysis involved data preparation, data reduction through coding, and data categorization (Figure 5.3.1).
Data Collection Phase
- Collect analog video and audio recordings of conversation on site and at conferences from 2003 to 2005
- Collect copies of journal articles from two archaeology journals and two conservation journals published in 2004

Data Preparation Phase
- Log and review video and audio files
- Select recordings to transcribe based on sound quality and activity
- Convert recordings into machine-readable text with the aid of transcription software (Transana)
- Use Xerox machine to scan journal articles and create PDF files
- Convert PDF files into machine-readable text using optical character reading software (AbbyyFineReader)
- Review texts for scanning errors

Data Reduction Phase
- Import text files into AtlasTi
- Review text files using AtlasTi
- Develop coding scheme and list of codes using AtlasTi
- Aggregate code words with similar meanings into "risk concepts"
- Link OxfordWordSmith to text files in AtlasTi
- Use OxfordWordSmith to search text files for instances of each code word within a risk concept
- Export Excel files from OxfordWordSmith for each code word with surrounding text and text file name
- Review Excel files for each code word in surrounding text and remove irrelevant instances
- Randomly select one occurrence of each code word for each text file
- Assign risk concepts to general categories

Data Analysis Phase
- Use Excel to calculate relative frequencies of risk concepts for each text file
- Use Excel to calculate relative frequency of general categories for each text file
- Review the context of risk concepts in detail using AtlasTi
- Develop context categories
- Use Excel to calculate relative frequencies of context categories

Figure 5.3.1 Flow chart of the analytical process
5.3.1 Data Preparation

The first step of the analysis was to pre-process data. This procedure was simple for the 407 diary entries and codes of ethics, since they were already machine-readable text files and could be downloaded from websites. Articles from the four professional journals required conversion to machine-readable text, and this was accomplished using a Xerox Workcentre Pro 35 copier with the capability of scanning documents and saving pages as PDF files. These files were then converted from the PDF format to machine-readable text using optical character reading software, Abbyy FineReader 7.0. Since scanning and conversion to machine-readable text can introduce errors, each of the 121 articles required proof reading.

Before beginning to transcribe any of the video and audio data, I logged and reviewed each recording, and while doing so, developed selection criteria for transcription based on sound quality and type of activity. I found that many of the recordings were not suitable for further analysis because of ambient noise. The sounds of excavation often overpowered my equipment, and since I was determined to keep my presence as unobtrusive as possible, I was not always able to position the camera or microphone in the best possible location. Similarly, sound quality in the labs was often difficult because of the acoustical properties of the room, and the fact that multiple activities and conversations often took place there. Discussion at conferences was also often difficult to capture if sessions were held in large rooms without microphones or if speakers chose not to use them.

Since transcription is a time-consuming process and my time for analysis was limited, I narrowed my selection of tapes to transcribe to recordings of discussion about joint activities, or narratives about the work of archaeologists or conservators. Although a broader scope of recorded activities could have been transcribed, this would have required me to hire a transcription service. Not only would costs have been prohibitive, but performing the transcription process myself aided my analysis, since repeated scrutiny
of the recordings provided opportunities to discover subtle details that might otherwise go unrecognized.

In total, 47 audio and video recordings (approximately 120 hours) met my selection criteria. I used Transana, software developed at the Wisconsin Center for Education Research for the transcription process. Transana is particularly useful for transcribing video, since it allows the researcher to view the image, "see" pauses and changes in sound, and transcribe text all in the same workspace (Figure 5.3.1.1).

![Transana workspace](image)

**Figure 5.3.1.1 The Transana workspace**

The researcher can therefore view gesture, sound, the reactions of others, and the context of the activity at the same time. The software also helps researchers manage large sets of data through hierarchical categories called "Series", "Collections", and "Episodes", and keywords can be linked to each component. I considered each case study a different series, and the audio or video recordings from each case study as different episodes.
5.3.2 Data Reduction

In total, texts from 121 journal articles and 47 transcripts were included in the analysis. These texts, along with my field notes, were stored in an analytical database called AtlasTi, a tool commonly used for the analysis of ethnographic data. The design of this software is based on an inductive approach described as grounded theory (Glaser and Strauss 1967, Strauss 1987, Strauss and Corbin, 1998). Grounded theory is in actuality a methodology, which, through a process of iteration and constant data comparison, generates “an integrated set of conceptual hypotheses” (Glaser 1998, 3). In this approach, themes and patterns of thought emerge from the data through an iterative process of data reduction through coding and classification. AtlasTi helps researchers manage, compare, and conceptualize information by displaying texts, providing tools for developing codes or notes, and producing analytical results graphically or statistically (Figure 5.3.2.1).

![Figure 5.3.2.1 The AtlasTi workspace](image)

Ethnographic researchers commonly use a process called coding as a way to identify patterns in the data. Codes can be developed from existing “dictionaries” of concepts relevant to the theoretical area of research (a priori or deductive coding systems), or can be derived from the texts themselves (a posteriori or inductive coding systems). The latter method is considered to have high internal validity because it is closest to the text itself (Kortendick and Fischer 1996). It is also the most appropriate approach for exploratory research. I developed my list of codes by beginning with a general theme of risk that I identified early in the research through interviews.
The code list evolved as I discovered key terms in the risk literature and then searched through the texts stored in AtlasTi for these terms or terms that were similar. In some instances, I grouped similar terms together as one code, and therefore I refer to these codes as “risk concepts”. A list of these codes and their definitions appears in Appendix 9.

AtlasTi proved to be a useful tool for storing the texts, developing a coding scheme, and using the codes to examine the specific contexts of their occurrence. However, once the coding scheme was developed, I found that a third tool, OxfordWordSmith 4.0, provided features that simplified the quantitative analysis.

OxfordWordSmith 4.0 includes a suite of tools for analysing words in text documents. According to the software documentation, “these tools are used by Oxford University Press for their own lexicographic work in preparing dictionaries, and by researchers investigating language patterns”. Although the software can be used for complex analyses, my use of OxfordWordSmith was fairly simplistic, involving only the Controller and the Concord Tool.

The Controller maintains a virtual “database” of text files to analyse by storing each file’s path (Figure 5.3.2.2). In this way, the researcher can access files stored in any location on the computer including those located within other software programs.

Figure 5.3.2.2 The OxfordWordSmith Controller
This feature allowed me to use the same files I used in AtlasTi, and to easily move back and forth between the two software programs.

The Concord Tool is used to search, analyze, and display terms within their immediate context. Terms to search can be entered one at a time, or a list of terms can be imported (Figure 5.3.2.3). I performed a separate search in WordSmith for each aggregate of terms constituting a risk concept. For instance, the risk concept “danger” represented an aggregate of terms such as “danger”, “dangers”, “dangerous”, “endanger”, “endangered”, “endangers”, and “endangering”.

Results of the search were presented in a “concordance display” showing the word in association with the nearby text (Figure 5.3.2.4).
I then exported the concordance display results into separate Excel worksheets for each code word representing a risk concept. Each worksheet included the code word, its surrounding text, and the text file name in which it occurred.

Each occurrence of code word in each worksheet was then reviewed in relation to its surrounding text in order to verify its meaning. For instance, the term “concern” could refer to a relationship or a connection rather than unease or worry. If the meaning of a term was irrelevant, the term was removed from the worksheet along with its surrounding text and text file name.

If a code word representing a risk concept occurred more than once in a text file, one occurrence and its surrounding text was selected randomly and the others were excluded. Therefore, the analysis compared the presence or absence of a risk concept in each text file category, rather than the total number of risk concepts in all files.

5.3.3 Categorization

Each text file was categorized as representing the conversation of archaeologists, the conversation of conservators, discussion between archaeologist and conservators, written texts of archaeologists, or written texts of conservators.

I reduced the data further through general and more fine-grained categorization procedures. General categorization addressed the descriptive characteristics of the data: genre (e.g. written versus spoken text), discipline, setting, and gender. The rationale for isolating data into these general characteristics draws upon the research of Garfinkle and others (Garfinkle 1952 and 1967, Goffman 1959 and 1986, Hymes 1972) which argues that these factors impact the nature of interaction. Since research suggests differences in practice by gender (Keller 1995, Fedigan 1994), I included this variable as well. In addition, for the written texts, I noted trends in co-authorship since research also suggests that this practice enables common understanding within disciplines (Florence
and Yore 2004), and such practice may signal opportunities for interdisciplinary collaboration.

In the finer-grained categorization procedure, I first reviewed the risk concepts themselves and, based on their definitions, divided them into two broad categories: those relating to “Harm or Potential harm”, and those relating to “Certainty or Uncertainty”. Secondly, I categorized data through a review of the context for each occurrence of a risk concept, and interpreted the focus of risk. During this review, three general categories of focus emerged: risks to 1) objects and sites, 2) procedures or techniques, and 3) humans or human behaviour.

I used Excel to calculate the relative frequency of risk concepts in archaeology journal articles versus conservation journals and transcripts of conversation between archaeologists versus those of conservators. I also compared transcripts of discussion within the disciplines to transcripts between the disciplines.

5.4 Summary and Conclusions

The theoretical and methodological strategy I have followed for this research is based on approaches commonly used by scholars in anthropology and sociology who are interested in the socially situated nature of knowledge and the mechanisms that contribute to the creation of professional identities.

The sample population for my research was opportunistically selected since my focus was on interaction between the professions, and interaction is known to be rare between American archaeologists and conservators working in terrestrial, pre-colonial archaeology. My research involved observations at three archaeological sites and four conferences from 2003 to 2005. I observed the activities of 44 participants, and 17 participants were interviewed. Many of the participants who were interviewed were also participating in activities I observed.
In an effort to capture disciplinary discourse in more formal contexts, I also analyzed 121 articles from two conservation journals and two archaeology journals for the 2004 publication year. Since most of the participants observed and interviewed were from the US or UK, I selected one conservation journal and one archaeology from the US, and one conservation journal and one archaeology journal from the UK.

I used ethnographic methods for data collection that included participant observation, interviews, and the examination of professional texts such as codes of ethics and guidelines for practice. Although I initially recorded and reviewed 176 speech events, I ultimately chose 47 for analysis based on the types of activities captured. Most of these activities occurred at one site during two consecutive field seasons.

I analyzed the data in relation to a general theme of risk that emerged early in the research through interviews with conservators. A code list of 21 “risk concepts” was developed from a review of the risk literature as well as the texts gathered through the research. I used the codes in two ways: to compare frequency of occurrence within the texts of the disciplines, and to compare the context within which these concepts were used.

The quantitative results of the analysis are discussed in Chapter 11. However, these results must be considered in relation to the context from which the data was taken. Therefore, Chapters 6-10 provide an overview of the context for the data gathered in the field, at conferences, and from the written texts. In addition, these chapters present examples of the physical and social environment in which trading zones for the production of knowledge develop. These vignettes also touch on several issues that I will argue are central to the practice of both professions.
Chapter 6 – Case One: Practice and Interpretation

Most of the data for this research was gathered from an archaeological project in Southwest Asia where conservators have been engaged in activities on site since the project began. I observed conservation and archaeological practice on site during two consecutive field seasons in 2004 and 2005.

6.1. Places, Spaces, and Time of Trading Zones

Irrigated agricultural fields surrounded the primary archaeological site for my research involving case one. A small village was nearby, but most supplies came from a larger town about 11 kilometres away. The site is approximately 45 kilometres from a major city that, although relatively unfamiliar to westerners, is a famous tourist location for the local population. Although at the time of my visit the archaeological site was becoming well known to the general public and more frequently visited, it was still considered relatively remote and unfamiliar to those in more distant areas. I was reminded of this fact during my first trip to the site as my taxi driver stopped often to ask directions and, when I arrived, spent a long period of time discussing the area with the site guard.

A well-maintained dirt road passed immediately to the west of the site which was enclosed by fencing. Cars, bicycles, motor bikes, and tractors passed along the road fairly often, but the road was not heavily travelled. Decades earlier the site was surrounded by marshlands, but this area was reclaimed for agriculture (Figure 6.1.1), and the sounds of

Figure 6.1.1 The general environment of Case One
farming equipment and herded goats often intermingled with those of excavation on site. A site guard lived with his family in a small house on the fenced grounds, and the family also operated a small wooden booth opposite the site and across the road which sold cold drinks, ice cream, and a few local souvenirs. At the end of each excavation day, crew members often came to the area to cool off and relax during the late afternoon break. A new paved parking lot adjacent to the booth was recently built to accommodate increasing numbers of tour buses and visitors.

Other buildings within the fenced area of the site included sheds for storing tools, an "experimental house", and a "dig house". The experimental house, located near the site entrance, was a small, thatched roof, mud brick building which was constructed to represent the ancient living spaces found at the site. For the convenience of visitors, entry into the house was through a side door, although once inside, a ladder from the ceiling suggested that ancient inhabitants entered through the roof. Interior walls were plastered and painted, and a hearth, storage area, wooden beams, animal skins, and animal skulls served to present the archaeologists' view of some of the significant elements of ancient daily life (Figure 6.1.2). During the time of my visits, one of the conservators was maintaining the wall plasters and also helping with the interpretation of the site by reproducing wall paintings in this building.

Figure 6.1.2 Interior walls of the “Experimental House”
A "dig house" (Figure 6.1.3) provided working and living space as well as a small interpretive centre. Construction was phased as funds allowed, and at the time of my visit it was considered essentially complete. The project was almost midway through its 25-year plan, and discussions were beginning about uses for the building once excavation was no longer in progress.

![Figure 6.1.3 Living and working space](image)

The dig house encircled a gravel courtyard, but there were openings to the south and west to allow the passage of vehicles if necessary. The building’s courtyard exterior incorporated a wooden-roofed veranda with a raised cement floor. Adjacent plantings of vines and flowers provided cool shade and a pleasant outdoor space for social activity, and the area was also used as workspace as the need arose. During my visit, one area of the veranda outside of the botany lab was used by local village women who were sorting through flotation samples — the remains of processed sifted dirt collected to retrieve seeds, bones, and other material otherwise too small to recover.
Conservators occasionally used this outdoor space if they were using materials that required better air circulation. For the most part, however, the veranda was used for relaxing throughout the day at breaks or after meals. Project members often congregated in the area closest to the dining and recreation area, and many preferred to eat meals there. This was also one of the primary spots for socializing at the end of the day.

The west and north sides of the dig house contained living spaces. Southern and eastern sides of the building contained work spaces – labs, storage areas, a seminar room, and a shared office space for the project director, site director, and others. A small interpretive centre was located near the dig house’s primary point of entry for visitors. All windows of the labs and storage areas included metal bars for security, and doors were locked at all times when unoccupied.

Although the dig house could accommodate sleeping space for 40, project members and visitors usually far exceed that number. During the period of my observations, over 100 team members were expected. Rooms were allotted on a first come, first served basis (with the exception of VIPs), and a “tent city” to the west of the dig house accommodated the overflow (Figure 6.1.4).

![Overflow living space](image)

**Figure 6.1.4 Overflow living space**

Project members and visitors arrived and departed throughout the field season. Therefore, those arriving later were usually assigned to the tents. Some crewmembers
preferred the privacy and relatively quiet environment of tent living compared to the dig house rooms. Some tents were kept in storage on site for this purpose, but project members were also asked to bring their own tents if possible. Shaded areas colonized rapidly, and tent dwellers learned to avoid areas near the sump system for toilets, as well as the path taken by the truck to empty it. Because of my dates of arrival, I was a member of the tent-dwelling community during both field seasons.

Most of the workspace was on the south and east sides of the dig house. The conservation lab occupied one of the largest spaces in the dig house. A drive-through opening to the east separated the conservators from the botany, lithics, and ceramics labs, but the faunal lab was immediately adjacent and to the west of the conservation lab. Finds were catalogued and stored in rooms on the eastern side of the courtyard next to labs for the human remains and ground stone analysis. All lab and finds room doors opened into the courtyard. Lab windows also faced the courtyard, and on the opposite side of the room, windows faced the excavation areas hundreds of meters away.

The conservation lab was a relatively sparse, square room with a countertop along the western wall. Cabinets and drawers were below the countertop and a single long shelf was mounted above it. Portable tables were set up along the south-facing windows and a laptop computer and light microscope were placed in the southeast corner of the lab. Tables were also placed in the centre and along the eastern wall of the lab. During my visit in the second field season, the centre tables most often served as workspace for the conservators, while tables and counter tops along the south and west wall were used for treated objects waiting to be moved to the finds room, or for objects awaiting treatment.

At one point, many of the items in the lab were horn cores that had been treated with cyclododecane and therefore needed time to sublime (vaporize) before storage. The faunal analysts were frequent visitors to the lab, as they often needed to complete measurements once material had been consolidated. The conservators also agreed to share
the northeast corner of the lab with one of the graduate students who was analyzing bone artefacts.

A few reference materials were also in the lab including two reports written by architectural conservators, a book on mineralogy, and C.V. Horie's *Materials for Conservation*. A small library of relevant books and reports on the site were also located in the seminar room. A computer network existed that could be accessed from the labs and facilitated file sharing and direct entry of information into a centralized database. At the time of my visit, conservation records, along with records from some of the analytical archaeologists, had not yet been fully integrated into the excavation database. Some parts of the excavation database were available to the public through the Internet.

Areas of excavation were located approximately 200 meters to the south of the dig house. Over the course of two field seasons, I observed activities in two separate areas of the site -- one that had originally been excavated by another archaeologist in the 1960s and another that was undergoing excavation for the first time. The previously excavated area was covered by a permanent shelter made of plastic sheeting with aluminum supports set into concrete (Figure 6.1.5). The shelter protected the exposed mud brick architecture from the effects of sun, rain, wind, and snow. Although it was open on the sides, air circulation in some areas was restricted, raising temperatures beneath it and creating a challenging working environment for excavators.

*Figure 6.1.5 Working space under the permanent shelter*
At the time of my visit, some conservators were speculating about the shelter's impact on the microclimate beneath it, and because of this concern, environmental monitoring was in progress. The shelter seemed to withstand high winds well and an interesting cacophony of creaks and groans were heard throughout the day as the plastic reacted to fluctuations in temperatures and air circulation. Occasionally the project photographer climbed onto the shelter's support bars for comprehensive views of the excavation units below.

The excavation units in this area were at various depths, representing stages in a process to remove fill from areas previously excavated in the 1960s. Areas with mud brick walls exposed during the field season were covered by sand bags to help prevent loss of moisture and wall collapse while areas adjacent to them were further investigated. Conservators worked in several of these areas to consolidate and investigate painted wall plasters, which were to be left in place temporarily for interpretive purposes. This was also an area from which I helped to take mortar and brick samples for a study on ancient brick manufacturing techniques and sources of materials. Higher elevations of the area near the conservation activities were stratigraphically more recent, and human burials were frequently found along with other objects and architectural features.

The newly excavated area was approximately 1,000 meters to the northeast and work was just beginning at this location during my first visit. By the time of my second visit, a great deal of progress had been made. A temporary shelter had been constructed of canvas supported by large metal supports and ropes that were staked to the ground and weighted by sandbags. The shelter not only provided protection for the crew from the sun but also helped the excavators see subtle changes in soil colour and texture. The shelter did not have sides, and temperatures beneath it did not feel extreme. It also appeared to withstand high winds.
Most of the project team worked in this newly excavated area during my second visit. Over the course of the season, the northern section received a great deal of attention from the conservation team and others as large concentrations of faunal remains were discovered (Figure 6.1.6). Ultimately, an animal skull set into a section of a painted plaster wall was left in situ in this section and enclosed within a wooden box for protection.

Figure 6.1.6 Working space in the northern section of the newly excavated area

Another area previously excavated by the current project is located approximately 100 meters to the north. These excavation units were completely enclosed by a canvas shelter and were used to interpret the findings of the project to visitors and new project team members. Visitors looked down from a wooden platform into excavated areas with the remains of rooms, floors, ovens, and benches. Mud brick walls with multiple layers of plaster were visible, and interpretive texts in several languages were posted on metal stands.

6.2 People in the Trading Zones

The project was unique in that teams of specialists remained on site throughout the entire field season. One consequence of the presence of specialists on site was that analytical results could be integrated into the excavation strategy more quickly. An
equally important consequence was that interpretations of the excavators could be
immediately integrated into the analytical results of the specialists. The project was
therefore comprised of a team of people with a variety of skills, knowledge, and
experience. A few were students just beginning or in the midst of their studies, but many
had been working professionally for years. Some of the archaeologists operated their own
archaeological consulting businesses, some taught at universities, and others were on staff
at museums or analytical labs. Several of the archaeologists and conservators were
pursing advanced degrees while working full-time.

Project members arrived and departed at different times during the field season
and ranged in age from their late teens to mid 60s. The team appeared to be almost
equally represented by both genders. Many on the team were from the US or UK;
however, a variety of other countries were also represented including Canada, Iran,
Turkey, Japan, Serbia, Croatia, Poland, and Greece. Most of the discussions I observed
were in English or the local language, and those spoken in the local language were
interpreted for me after the discussion.

During my first field season visit, the number of conservators on site at one time
was limited by the terms of the permit. This meant that arrival and departure times of
conservators needed to be carefully coordinated in order to provide training for the
maximum number of students. Teams of conservators arrived in pairs, stayed for three
weeks, and then departed as the next team arrived. The conservation team leader planned
several days of overlap in the schedules of arriving and departing teams in order to
provide a measure of continuity. At the time of my arrival, two conservators were just
beginning to set up the lab. Both were experienced students completing their final
coursework requirements. Two other student conservators, along with the conservation
team leader, joined them as I was departing.
The project director was an archaeologist originally from the UK, and at the time of my visit, he was a professor at a university in the US. His research at the site was designed to extend over a period of 25 years, and at the time of my first observations, the project had been in progress for 10 years.

The site director was an archaeologist from the UK working to complete her PhD at a UK university. She had been managing activities at the site since 1998, and since this time had been guiding the development of the project in active partnership with the director.

At the time of my visit, archaeologists providing analytical support included specialists in the analysis of faunal, human, and macro and micro botanical remains, as well as specialists in the analysis of ceramics, obsidian tools, ground stone objects, and architectural materials. In addition, there were other researchers who were visiting the site as part of their own independent research.

During my second field season, five conservators were on site. Two were experienced supervisory conservators and two were students in the final semester of their graduate program. Of the supervisory conservators, one was an experienced conservator who had graduated from her conservation program a year earlier. The other was an experienced conservator fulfilling the final requirements of her MSc. In addition, an experienced conservator who was also a recent graduate had been brought to the site by one of the archaeologists to investigate mud brick materials.

My observation and participation involved many of the same participants during both field seasons.

6.3 Trading Zones of Activity during the First Field Season

Because of the requirements of the excavation permit, my stay on site during the first field season was limited to five days. I arrived shortly after the site had been opened for the season, and many project team members were not yet on site. However, arriving at
this time gave me an excellent opportunity to see activities unfold as labs were set up, new project members were given tours of the site, and meetings were held to explain documentation procedures and rules and regulations for behaviour. In other words, I was able to observe discussion of matters concerning formal and informal site conduct. For example, at one meeting project members were reminded that in spite of the fact that dig house staff were present, all team members were expected to help with maintenance tasks such as replacing light bulbs and emptying trash.

The project team worked six days a week, Saturday through Thursday. Friday was the preferred day off, so that the team could travel to the city to bank and gather supplies. Each workday began in the excavation units and labs at 7:00 a.m. where team members worked until breakfast at 10:00 a.m. in the dining hall. Work resumed from 10:30 a.m. until lunch at 1:00 p.m., and then continued from 1:30 p.m. until 3:00 p.m. when, due to the requirements of the permit, all excavators were to leave the site. From 3:00 p.m. until 5:00 p.m., team members could take time to relax, although many used this time to catch up with various tasks. Work in the labs and dig house continued from 5:00 p.m. until dinner at 7:00 p.m.

Excavators used the late afternoon before dinner to enter information into the project database and complete other documentation tasks. Tables and chairs in the seminar room served as desk space for the excavators, and a project computer and printer and small library were also located there. The conservators used this time to work on objects brought in from the field earlier in the day and to enter condition or treatment report data into the conservation database. Meetings between various project members were sometimes also held during this time.

Gatherings were often held in the seminar room after dinner to provide updates about procedures, or to present formal lectures. Although attendance was not always mandatory, most team members participated. On occasion, a visiting researcher would present the status of his or her work.
One evening during my first season visit, the entire local village was invited to tour the site, join the team for dinner, and listen to a lecture by the project director. Tours and seating for the village members were carefully orchestrated to accommodate local traditions that required the segregation of women and men.

During the first field season, I spent most of my day in the conservation lab or one of the excavation units in the area originally excavated in the 1960s. Some of the walls in this area were thought to contain layers of painted plaster. Units to the west had been excavated to the deepest levels of the site representing the earliest occupations 9,000 years before the present. Units at higher elevations to the south and to the east were still being excavated, and I travelled back and forth to observe conservation activities in one area and excavation in the other. During most of my time in this area, I watched the conservator consolidate wall plasters and conducted conversational interviews.

According to some scholars, the presence of painted wall plasters was one of the most significant characteristics of the site. During the previous field season, a conservator reproduced one of these paintings on wooden panels using modern materials, and this was mounted on wooden posts above the area where the paintings were found and used as a temporary aid to interpretation (Figure 6.3.1).

Figure 6.3.1 A temporary interpretive aid for wall paintings
On the first day of my visit, the site director identified adjacent units south of this location as a high priority for the attention of the conservation team during this field season. The wall was covered by sandbags in part to shore it up but also to keep it covered so that it would not dry out and plaster layers would not detach. As the site director explained her goals, she noted that four years earlier the shelter had failed and the area had been flooded. She described the fact that “big chunks” had fallen from the walls but that the conservator brought in to resolve the problem “did a wonderful job”. The conservators appeared a bit overwhelmed but seemed to take comfort in the fact that contact information for previous conservators was on hand. Sharing experiences with materials on specific substrates appeared to be a common strategy, and I often heard such questions as, “have you ever used...” or “what does it set like?” or “what makes it different than...?”.  

The conservator’s strategy for consolidating the walls involved moving away sandbags incrementally in order to keep as little of the plaster exposed as possible. She then filled the smallest cracks by injecting consolidant, tapping the plaster, and then lightly pressing it to determine if the consolidant was holding well enough. The conservator later commented that, according to her friends, she “thinks with her fingers”.  

Watching this technique lead me to consider how much conservators rely on a sense of touch and whether this aspect of their practice distinguished it from archaeology. A visit with the archaeological team in a nearby unit provided an answer. They told me about working at a site where the colour of the walls, floors, and fill appeared to be the same in a certain type of light. As a consequence, the only way they could identify the wall was by feel. They also noted they could feel different levels of the stratigraphy through their trowel. When I later commented on this discussion to a conservator, she suggested that one distinction between the two practices was that archaeologists use the sense of touch to determine the material, but conservators use touch to determine the material and its condition.
Another activity I observed during my first field season involved lifting a large piece of wood. One of the excavating archaeologists had come into the lab to state that she had found a large piece of charred wood and wasn’t sure how to proceed. The conservator then followed her into the field and both examined the scenario. Part of the dilemma was that only a part of the wood was exposed, therefore the total size of the buried object was unknown. The excavator needed to decide how to support the object temporarily, and whether or not to lift a portion of it at that moment, or to wait until more of it was exposed and attempt to lift a larger segment. Both the conservator and the archaeologist decided to consult the site director, and all discussed the pros and cons of each scenario. In the end, the conservator and excavator worked together to lift a large portion of the wood. In the process, the conservator demonstrated how to wrap the sample with an ace bandage rather than string as the excavator had originally proposed.

Many human burials were also uncovered at the site. Shortly after my arrival on the first day, a project member visiting the conservation lab mentioned that an infant burial had been found with shell beads. Although the archaeologist had not requested the conservator’s help, the conservator decided to confirm that this was the case while also delivering a container for the beads. As we arrived at the unit, the archaeologist was uncovering each bone from the burial separately and placing it in a box. Discussion between the conservator and the archaeologist involved the beads, rather than the human remains. The archaeologist noted that she had not seen anything like them before and that they would need proper numbers assigned to them for cataloguing. The conservator carefully placed each bead in a separate compartment of a plastic box and took them back to the lab while the archaeologist continued to excavate the burial.

The fact that there was no discussion about the human remains suggested that conservators were not typically involved with human remains on this project (at least with this specialist). This fact was confirmed the next day while I watched the same archaeologist excavate an adult burial in another area. I was interested in the process of
removing the burials and asked if I could follow the archaeologist to the excavation unit to observe her work. She agreed, but due to the restrictions of the permit, I was required to be escorted to the site by the conservator.

Removal of the burial was in progress, and as we arrived on site the conservator asked if her help was needed. The archaeologist responded with a narrative about the importance of collecting the remains herself in a particular order so that identifying them in the lab would be simplified and more efficient. She also stated that “we try to limit the stuff on bone. It obscures the surface”. My interpretation was that this archaeologist preferred not to work with the conservators, and during my first field season, I observed few interactions between the conservators and human remains team. Was this circumstance common between conservators and the archaeologists interested in human remains? Or was this merely a manifestation of one archaeologist’s personal style?

After breakfast on the second day of my visit (which was also the second day that the site was officially open), the project director lead a 1 ½ hour tour of the site for team members who had just arrived and were new to the project. This provided an opportunity for me to learn, along with the others, how the current activities of the excavation fit within the long-term project goals, and what aspects of the current excavation were considered most important. In many ways, the tour participants were being shown what to “see”. Most were archaeologists, but a conservator new to the team also took part.

The tour began in the Interpretation Centre, a one-room area of the dig house that is generally kept closed and locked and is opened as individual carloads of visitors or tour bus groups arrive. The centre includes displays of artefact replicas, wall paintings, and other items found at the site. The director discussed the purpose and future plans for the centre and noted that at times it was used as a place to demonstrate traditional crafts. In fact, a textile loom in one corner of the room was used to show how textiles were made.

The tour continued at the Experimental House, a small mud brick building that was an interpretation of a typical ancient living space found during the excavations. The
director pointed out the thatched roof and plastered exterior, and noted that the entrance was for the convenience of modern visitors but that, most likely, original inhabitants entered from above.

Once inside, the director noted that although the interior may seem a bit dark to us, in antiquity, more light may have entered through an entrance in the roof. Various architectural features were pointed out to us — wooden beams, plastered walls, wall paintings, the oven near a wooden ladder leading to the roof, the storage area, and a platform or bench. The director also noted where particular concentrations of materials were consistently found. No one asked questions, perhaps for fear of revealing what they didn’t know. Or perhaps this part of the tour held less interest because it was a different phase of the interpretive process — interpretation undertaken by those with an interest in the transfer of knowledge to the general public rather than to the scholarly community.

The next stop on the tour was one of the first areas excavated by the project team. The excavation of this area was considered complete and excavation units had been left open for interpretive purposes. It was a semi-permanent, canvas-covered structure, and a wooden platform had been built along the interior for visitors to peer down into the excavated area (Figures 6.3.2 and 6.3.3).

Figure 6.3.2 The semi-permanent shelter over the completed excavation area (photo courtesy of T. Rico)

Figure 6.3.3 The viewing platform in the completed excavation area (photo courtesy of T. Rico)
As we distributed ourselves along the platform, the project director jumped down into the excavated units and pointed out specific features, some of which we had just been shown in the experimental house. To this archaeologist then, excavators must try to understand the context of what they are seeing at the very moment it is uncovered. Some of his comments made his approach more explicit. For instance, on one occasion he drew attention to the importance of room floors:

you know if you get two floors when you're digging on the site one of the main problems you'd find is...how do you dig these things...on the whole we try to take...the floors off separately because we see there's a lot of change in any of these houses...

We then moved on to the south to an area originally excavated in the 1960s. Most of the 1960s excavation had been uncovered by this project during previous seasons, and deep excavation units were covered by a large, permanent plastic and aluminium shelter. Some areas under the shelter were still being excavated by some of the most experienced archaeologists.

We followed the site director to one of these areas where he stood below the unit currently being excavated. We stood next to a wall where multiple layers of deposits were visible and characterized by different soil colours and textures along with pieces of charcoal, bone, and other material. The project director described his goal to excavate this area to the level of the other units and predicted that in the process of doing so, they would find architectural features characteristic of earlier time periods as well as many human burials. As evidence of the latter, he drew our attention to the fact that an infant burial was being excavated by the human remains specialist nearby. This presented the director with another opportunity to point out specific types of information of interest to him:

[the human remains specialist] thinks this is a...newborn baby so it died at birth (...) this is the skull ((he makes a circular motion)) and this is the vertebrae ((he points))...but it has these beautiful shell beads ((he points to plastic containers)) with two holes and...I've never seen that (...) here before (...) Can you see alright? (...) and as I said it's often with the babies that you get the richest (...) finds. Adults have almost nothing
with them... babies are... often found with shell but they're often found with colouring (...) very dense blue or red colour which may have been used to paint the baby (...) often with a spatula or wooden spoon... 

(he turns and takes the box back to the human remains specialist then returns to group).

In this narrative, the director emphasized that baby burials were treated differently than adult burials and therefore were significant to the ancient population. He implied therefore, that they were also significant to him, and explained several ways to identify them as well as important characteristics to “see” — the shape of the bones, the presence of blue or red pigments, and, in this case, the association of beads or wooden spoons.

As the group turned to leave, the conservator briefly stopped to ask the human remains specialist if she needed anything and was told that the beads would be delivered to the lab once their location was mapped in and appropriate accession numbers were assigned to them. The beads generated much interest, and later various crew members came in and out of the conservation lab to view them. Perhaps this was because the project director commented that he had not seen anything like them before, or perhaps crew members were interested because it was early in the season and few objects had been recovered so far. Interestingly, crew members from the local university came into the lab to examine the beads and commented that they had found similar items elsewhere.

The next evening, the project director gave a presentation to the project team to update them about the goals for the season. The second half of the presentation was about specific changes in the methodology for the current season. The director stated that according to the local government, “we weren’t moving enough dirt”. In other words, the excavation was moving along too slowly. This was certainly the case by comparison to the project in the 1960s which used a different theoretical approach where objects were recovered quickly, architectural elements were exposed completely, and materials were analyzed after the excavation season ended. During the 1960s, it was also not common practice to take additional steps for the recovery of small animal bones and plant material.
In response to the concerns of the government, the director decided to adopt different excavation strategies in different areas of the site. Some areas would be quickly excavated with less mapping and special sampling, and others would continue to be fully sampled and mapped in detail. In some cases, an approach somewhere between the two extremes would be taken. Decisions about specific approaches to take for each area were determined by the project and site directors with input from members of the analytical and excavation teams.

Another unique characteristic of this archaeological project was the fact that project members toured the excavation units on a regular basis. Ideally, this process functioned as a way to provide feedback and inform decisions about how to proceed. However, the process sometimes created challenges due to the time required by the tours themselves, and by the speed at which analysis must be accomplished in order to provide feedback. The process also had the potential to create tension between project members since some were not allowed to participate in all of the tours. Also, since most tours were of the excavation units rather than the labs, there was potential to create the perception that information was not flowing in both directions.

6.4. Trading Zones of Activity during the Second Field Season

My second visit to the field was not governed by any special restrictions of the excavation permit, and therefore I was allowed a longer stay. I arrived mid-way through the season and stayed until the last day of excavation. This gave me an opportunity to observe activities during a different set of conditions; labs were fully staffed and operational and excavation was in full momentum, although project members and a few special visitors continued to arrive and depart at different intervals. At one point, more than 100 people were working in different areas of the site at the same time.
During this field season, I observed activities in the same settings as my first visit -- in the labs, seminar room, offices, and excavation units. One difference was that the area of the new excavation, which had literally just begun to scratch the surface during the previous field season, had progressed much further. Consequently, architectural features such as walls, benches, ovens, pillars, and storage pits were now visible.

For the most part, the primary group of participants during this field season was the same as during the first field season, plus there were a few additions. My arrival coincided with the first day on site for two student conservators who were finishing their conservation degrees. These students joined two other conservators who had been on site throughout the season and would supervise their work. One of the supervising conservators had been on site last year as a student and, since then, had finished her degree and had been working for a museum. This year, she was part of the paid professional staff for the project. The other supervising conservator was a student with extensive experience whose work at the site constituted, at least in part, final requirements for her degree. In addition to this group of conservators, another conservator was on site to work with an archaeologist who was studying building materials.

6.4.1 Consolidating Faunal Remains

Many of the activities I observed involved interaction between the conservators and three women from the team of archaeologists working with faunal remains, all of whom taught at universities in the US or UK.

The objects on which the conservators worked were different from those of the previous season. During the previous season, conservators worked on ceramic and glass objects. This season they worked mostly with animal bone. One of the conservators noted that this was probably a reflection of the fact that the excavation was taking place in a
different area of the site which was known to have been occupied during a different time period.

For any archaeologist, the ability to recover objects intact is the ideal. However, large pieces of animal bone can present particular problems since once exposed to the air, they become even more fragile. If the bone collapses, diagnostic features are lost, as is the ability to record precise measurements for accurate identification and interpretation. The faunal analysts and conservators developed a way to avoid this scenario by working together to excavate and consolidate the objects at the same time.

The process was begun when the excavators discovered large pieces of bone. The decision to call the faunal specialist into the field was made by the supervising excavator, who helped to determine whether the object merited special attention during excavation. If so, one of the faunal specialists would undertake the task, and if necessary, measurements would be taken before the object was removed. For one of the specialists, excavating the remains involved visualizing the orientation of the entire bone, based on what was exposed. On more than one occasion, she brought a skull from her reference collection into the field, turning it in one direction or another to replicate what was visible at the moment. This process helped her identify what she was seeing and anticipate what might remain in the ground in risk of collapse.

If the remains were particularly fragile and important, the next step of the process was for the faunal analyst to call for the conservators, who would apply a consolidant to the object while it was excavated by the analyst. The archaeologists favoured cyclododecane as a consolidant, which they sometimes described as “the magic wax”. As described in the conservation report, cyclododecane is a cyclic hydrocarbon with a waxy texture. At room temperature, it slowly sublimes from solid to vapour.

This consolidant had become popular with the faunal specialists because it helped them remove remains that were more complete, making the objects easier to measure and identify. As the conservators noted in their report for the previous season:
We found that the working properties of this material, when applied with a brush or pipette, made it an ideal and practical support material for fragile bone and an additional support material for objects requiring specialists excavation and removal from [the] site.

This procedure meant that the archaeologists and conservators worked side by side -- archaeologists excavated the animal bone while conservators quickly applied the cyclododecane before it solidified. One drawback for the archaeologists was that as the cyclododecane cooled, it formed a thick waxy layer reducing visibility and making measurements inaccurate. A drawback for the conservators was that cyclododecane could take two to three weeks to sublime (pass into its vapour state), and objects sometimes had to be stored while still “wet”. Although the material did not seem to leave a residue, the conservation report noted a need to refine methods and assess long-term effects.

The advantages of cyclododecane apparently outweighed the disadvantages, at least for the faunal analysts, as it became common to see these archaeologists working with the conservators to lift objects.

In contrast, I observed few interactions between conservators (C) and archaeologists (A) working with human remains either in the lab or in the excavation units. One excavator attributed the difference in approaches to personal style, stating that some archaeologists simply prefer to do things their own way. Apparently the human remains specialists preferred not to use cyclododecane. During an application of the “magic wax” one archaeologist joked about why this may be the case:

C: (...) this stuff is really for you guys definitely
A: it's brilliant yeah
C: yeah
A: we like it
((laughter))
A: we like it (...) human remains (...) wants to study things too quickly
C: I know
A: so they don't like it  
C: I know (...) yeah  
A: they want to be able to (...)  
C: for you it's like  
A: for us it's like slow detailed  

This reference to doing things "quickly" versus taking a "slow" and detailed approach referred to the fact that the cyclododecane needed to sublime before diagnostic features became visible. The faunal analysts were apparently willing to accept this trade-off, but human remains specialists were not.

6.4.2 Finding Pigments in Plasters

Other activities involved efforts to identify and document the remains of painted plasters. This site is well known for wall paintings found during the first excavation in the 1960s. Since the beginning of the current project, several conservation teams have examined alternating layers of pigment and plaster found throughout the site.

Discussions between project members and narratives about activities have been video recorded and archived since the beginning of the project. One video recording from 1995 provides an example of the challenges the conservators (C) and archaeologists (A) faced in interpreting what is seen during this work:

C: You know I think (...) one of the problems here is the definition of what is paint and what is a plaster (...) either it involves water which means you have a plastic mass

A: I see

C: or a plastic material which you are applying in a liquid form or in a plastic form which then solidifies and when you see those in cross section or you see them on surface they tend to be much more homogenous in thickness and much more homogenous in surface. This looks either like a very very very abraded surface or a dry scatter

A: um hum
C: and one of the things that argues for a dry scatter is these concentrations of

A: oh I know

C: of lumps that are on the surface. The other thing is this looks like a floor because of all the (...) cracking it's a very smooth surface (...) so having not seen any of this before

A: ah hum

C: here I would say it doesn't look like the things that we've seen out in the cross section in the flat like the wall that was exposed where [other archaeologists were] digging that we treated and

A: yes (...) however what is interesting is that there is a thick layer of packing here so it clearly is coinciding with a major change in stratigraphy and (...) the question is how that all relates to the blocking of the wall. And similarly there is what is clearly a plaster along this part of the

C: um hum

A: threshold where (...) wasn't deliberately applied and that in here is just below the last layer of

C: uh hum

A: plaster which well it does describe things as being paint being sealed by clean layers sometimes they may have a ritual act which is then sealed but (...) unfortunately this has been truncated (...) well dug in the 60s and (...) also dug last year it's a very complex stratigraphic situation we're putting in a section to try and pick that up

C: This I mean you'd have to wet this or clean this up but you probably have the potential for two situations one is an applied liquid paint that's red and then this. This it's hard to say but these don't look the same. And he does talk about a banding of the painting of

A: oh yes (...) highlighting features

C: right so yeah you know so it looks I think that if this got wet up or cleaned we might be able to see the distinction

A: they'd be nice comparative samples too wouldn't they

C: yeah and they happen to be in very similar locations so I think one would have to be careful (...) differentiating paints from deposits
The discussion provides some insight into the different processes used to interpret what is seen. The conservator focused on characteristics of the plaster and pigments while the archaeologist made the connection between these characteristics and stratigraphic sequences.

The challenges of interpreting these pigments and plasters presented themselves to the conservation team in 2005 as well and approaches varied in different areas of the site. Some units in the new area were being excavated more rapidly, and where this was the case, areas of faint pigment were documented and then removed. In order to quicken the pace of this process, the project director and one of the supervising conservators decided to ask local village women to help. These women had previously been working with the project to sort macrofossils (small bits of bone and plant material) and were very skilled at detailed work. The conservator took me to the area where the women were working and described the process and the rationale:

I talked to [the project director] about it and (...) in some rooms...on site [the director] wants the plaster layers to be just taken...[but] because of the...painted plaster...he's worried that they are missing it...and we are...consolidating some of the walls and he's worried that if they want to (...) actually look at certain areas, consolidation...will make it harder...and it's going to waste lots of time (...) so we decided that some rooms like this (...) we're gonna leave...some of the...plaster layers at the bottom just to see the relationship between the...plaster and the floor (...) and then take everything...layer by layer...and if you see any pigment or anything just stop (...) then document it and just chase the pigment (...) and we decided that working with local...women...is a good idea...because it's...gonna...take loads of time (...) either for an archaeologist or for a conservator (...) so again we are kind of (...) working with the local people here (...) and training them how to do it...

Later that day I was asked to help with a similar task in the area of the site previously excavated in the 1960s. Investigations of the painted surfaces of one wall of a unit had been begun by the student conservators who had just departed. The result of their careful investigation was a square-shaped area approximately one centimetre in depth from the outer surface of the wall revealing layers with faint red specks of pigment and darker black areas (Figure 6.4.2.1).
One of the newly arrived conservation students and I were asked to continue where the others had stopped. The supervising conservator instructed us to “follow the paint”, that is, to slowly scrape away layers of plaster until we saw pigment and then carefully uncover areas next to it to see the full extent of the painted surface. This proved to be a challenge since plaster layers were extremely thin, pigments did not appear to have a binder, and the surface of the wall was not flat.

We proceeded carefully, but found that plaster layers were too thin to follow. This approach to investigating the painted surfaces by following layers seemed very similar to those used by the archaeologists for uncovering other architectural features. However, because these layers were so thin they were difficult to remove mechanically, and progress was slow. Layers often overlapped and followed areas of relief, and we found ourselves consulting with the supervising conservators frequently.

After we had worked on the wall for a day, the project director stopped by to examine our progress and we discussed how to proceed. The director suggested that we take a few samples of the plaster layers and that we should consider bringing the local women in to help so that we could move along faster. He concluded his visit by saying “we’re learning a lot here”. Later we discussed this event with the site director and one of the supervising conservators, and realized we weren’t sure whether we had received a
directive or a suggestion about the local women helping us. Any paintings that we might find on this wall were important, and the process for finding them, if they existed at all, was challenging. Bringing the local women in would make the process faster, but would the women be able to see these thin pigment layers? Was this method of mechanically "excavating" plaster layers the only way to proceed?

Ultimately, our discussion triggered further discussions with the project director, and a decision was made to consult with other conservators who had worked on the site’s wall paintings during previous field seasons. Samples were taken of the plaster layers and our work was covered with a coating of a temporary plaster-like material, not only to protect the pigments, but also to make the sampled area of the wall less obtrusive to visitors. As the conservators noted in their report, the investigation of pigmented areas of wall plasters were a subject for the development of future research.

6.4.3 Protecting an Object In Situ

Over the course of the last few weeks of the field season, it became clear that one section of the newly excavated area was producing unusual amounts of plant and animal materials. By the last week, most of the section had been excavated to reveal what appeared to be several large storage pits and a concentration of horn cores. Ultimately, the excavator of this unit uncovered a large animal skull set into one of the plaster walls, and the project director decided that this should be left in situ. To accomplish this goal, the site director met with the excavator and the conservators to discuss how to proceed. A consensus was quickly reached that the skull should be enclosed in a wooden box with some sort of fill. However, a lengthy discussion followed concerning what type of fill this should be and whether or not the object should also be wrapped in another type of material to protect it from the fill. Several alternatives were offered, each based on past experience. The site director suggested filling the box with foam based on seeing it used elsewhere as a packing material. The conservators suggested sand, and noted that in their
experience, foam was difficult to control and dispensed from the canister with such force that it sometimes damaged the objects. Based on his knowledge of the burial environment and characteristics of the soil, the excavator was concerned about the pressure and weight of the fill against the object. The site director also noted that, based on her experience with the effects of winter weather on other structures at the site, the box should be sturdy enough to withstand the weight of snow. One of the conservators stressed that, no matter what fill was used, a barrier between the object and the fill should be used, and that once sealed, the box should not be reopened.

The conservators finalized the plan, and construction of the box took place over the course of the next several days as carpenters were brought in from a nearby town (Figures 6.4.3.1 and 6.4.3.2). One of the conservators presented the rationale for this approach during the last site tour of the season:

We decided that [the project director] mainly wants this...to be preserved in situ...They are really fragile (...) so therefore we decided that...we had to come up with a...protective box ...There's gonna be a shelter built...on this area (...), but we don't know when (...) So it...should be a long term thing to actually preserve this...room. So basically we came up with this wooden box and now the carpenters are actually building it. And once they finish (...), we put...geotextile on the floor to prevent any denting...of soil, and (...) we're gonna fill this...with some ...sacks [of] cloth (...), and then over the top we're gonna cover it with fine sieved sand and [a] silt mixture (...). Over the top there's...gonna be a barrier layer between the bucranium horn cores and sand (...). So we're gonna fill it and then we're gonna cover it with a wooden...roof ...slightly sloped, and over the top we're gonna actually cover it with ...sacks and...everything ... as we do usual[ly]. And we're gonna leave it (...) hopefully but I don't know [the site director] was saying he might wanna open it up next year. But I don't think it's...a really good idea to keep opening and closing down because once you actually create an environment like this (...) the environment inside the box sets. So then (...) you don't wanna (...) play with the equilibrium of this (...) box (...). So in my opinion it should just be closed down now and...should be opened up again whenever the shelter is gonna be built up (...). So that's what's happening. But this is going to be preserved, and then we also consolidated horn cores and...buchrania. So they're all set now to be opened up again within the, I don't know, next three, four years...
The final report shows that in the end, all of the concerns of those involved in the discussion to preserve the object in situ were addressed:

Even though the finds were consolidated with 25% Primal AC-33 (acrylic emulsion) in deionised water, they needed to be protected against the environment until the shelter could be constructed. It was decided that a wooden structure (2.20m x 1.90m, pine wood) which would be filled with clean sand, was the best option to cover the room.... Local carpenters were employed to build the structure. Firstly the floor was covered with a geotextile layer in order to protect it against any physical damage which may be caused by the structure.

Once the structure was built, the surfaces of the bucranium and the horn cores were covered with aluminium foil as well as supported around with the small sized sand bags. Aluminium foil is easily obtainable and being inert and easy to use, it eliminates the risk of the long term effects of some conservation materials. The structure was filled with clean sand before its lid was attached. Finally, the wood was varnished to make it more durable against the climates and the whole structure was sealed along its base with the Polyurethane foam.

6.4.4 Collecting Wood Samples

Conservators often mention being asked to undertake activities on site that they do not consider to be conservation tasks. In one such instance, the conservators were asked to collect a large wood sample that would be sent to a dendrochronology lab for dating and species identification. This was usually done by the excavator, but in this case, the excavator was requesting that this be undertaken by the conservators because taking the sample was tedious, time consuming, and required more skill. The archaeologist
explained that in the past he had followed a standard "protocol" but had destroyed a sample and did not want to risk a similar scenario.

The protocol for taking dendrochronology samples was printed on a sheet that the conservators had never seen before, and it had been produced many years before by the lab in the US that analyzes the samples. This protocol involved instructions about the size and orientation of the sample required, how to hold the sample together by wrapping it with string, and how to ship it to the lab. The conservators’ first reaction to the protocol sheet was to question the terminology. One of them commented that “I'm having a hard time visualizing what you mean by lift”. To the conservator, “lifting” meant trying to recover the object intact, and she stated that “when we lift it, it might crumble”. However, the archaeologist was not concerned about the possibility of the piece falling apart and stated “All we need is a good cross-section (...) get the whole section because that’s the way we count”.

The conservators seemed uncomfortable with the fact that the protocol did not mention whether or not a consolidant could be used, since this would make collecting a good sample much less of a risk. However, they were concerned that use of a consolidant could impact analytical procedures. They therefore asked what other type of analysis might be done on this sample that could preclude them from using a consolidant. The archaeologists assumed that the sample would be used for dendrochronology only, but since they were not experts on this topic, were not certain if use of a consolidant would be detrimental.

The conservators examined the wood in situ, undercutting it slightly to try to determine exactly how fragile it was, and presented a plan to the archaeologist to cut the piece into two parts, and consolidate one of them. The conservators noted that this solution would keep some of the sample from damage during shipping, to which the specialist noted that “we put them in boxes (...) when you wrap it up with string and wrap it up tight this isn’t a problem”. The conservators responded that they would use gauze
instead of string. Nevertheless, rather than damage during shipping, the archaeologist’s main concern was how the sample was taken and she reminded them again not to “divide it length wise”, referring to the fact that the wood’s significance was its concentric rings.

6.4.5 Work in the Conservation Lab

The conservation lab not only served as a workspace but also as social space for discussion about objects receiving special attention. In many instances, archaeologists came into the lab to see an object they had found after it had been “cleaned”. In other cases, people came into the lab because they had heard an interesting object had been found. As a result, the lab often became a centre for casual discussion and speculation about the significance of a find, and it was also a place for the exchange of ideas between archaeologists or the archaeologists and the conservators.

Whether or not an object was brought into the lab could create tensions, since objects in the lab were privileged by the time and attention given to them by the conservators. In one instance, the site director was dismayed to find that a relatively common object had been brought into the lab by a new member of the project team. Upon discovery of this fact, she immediately left the lab to discuss this event with the excavator and make sure it was not repeated. The decision to bring objects to the lab was not made lightly, and therefore the object or the person requesting treatment for an object was privileged in some way. In an example of the latter, an object of relatively little archaeological interest received special treatment when a government official deemed it worthy of display in the local museum, notwithstanding that the museum already had an almost identical object on display.

When archaeologists brought objects into the lab, treatment was sometimes discussed, but not always. If objects were fragile but common, treatment appeared to proceed without discussion. If objects were uncommon or deemed significant, discussion with the archaeologists about how to proceed would usually follow, although these
discussions were not necessarily detailed. In one instance, an object was brought to the
lab with a great deal of soil attached to it. The archaeologist asked the conservators not to
clean or touch the object without gloves and stated that, “we just need it separated and we
need to decide what this is”. Since the conservators did not understand the rationale
behind the approach, it was difficult for them to know how to proceed.

During discussions about the objects, conservators often needed to understand the
archaeologist’s priorities. For example, one common procedure to recover objects
involves block lifting, where the object is removed from the excavation unit within a
block of its surrounding soil, and the soil is then carefully removed in the lab. When this
method was used for one of the faunal remains, the discussion between the conservators
and archaeologists involved which area of the soil should be “cleared” away first. The
archaeologists responded that since they needed to get measurements, it would be “nice to
see” things before “moving stuff”, and she provided guidelines for the sequence the
conservators should use when removing the soil.

In most cases, explicit instructions about how the objects were to be handled or
treated by the conservators were not given, and decisions were left to the expertise of the
conservation team. Occasionally, other specialists asked the conservators for information
that related to the objects they were analyzing. In one instance, an archaeologist asked
whether or not a particular consolidant was organic and would therefore contaminate her
sample. In another case, an archaeologist asked the conservators to help her identify a
material.

The conservation lab was also viewed as a source of special materials and
equipment, and archaeologists often came there to borrow tools and other items.
Sometimes other members of the project team also came there to work. The faunal
analysts, for example, came to the conservation lab to measure horn cores as the
cyclodecane sublimed and diagnostic features became more visible.
Because the conservation lab was larger and well ventilated by cross breezes, it was also occasionally used by the botanical specialist. The archaeologist described her process (and the need for a fume hood) during a tour:

Part of the processing ... takes about three or four days and you can't really do it in the field because you need all kinds of things like centrifuges (...) because you need to get rid of the calcium carbonate in the clay and (...) you need to burn it to get rid of the organic matter. So we don't have all the specialist's stuff that is needed here so what I tend to do is I just get rid of the clay which isn't too bad it's just using Calgon which is like the stuff you use in dishwashers. That gets rid of the clay and that just allows me to see presence or absence so I can just say to somebody oh you've got a lot of wheat in here or you've got a lot of sedges or a lot of reeds. And I literally just (...) work in the conservation lab and (...) I have a beaker and pour off the clay and then I mount it onto a slide and just quickly scan it (...) so that I can give some sort of feedback. And (...) then I just select some to take back to [the city] and process properly. But the other thing that I try and do is (...) sometimes people will notice in the field where they have concentrations of phytoliths that could be from matting or boxes and those I do try to sort of mount straight onto a slide here which is probably when you see me in my gas mask over in the other room because ((laughing)) it's carcinogenic and it's not very pleasant to inhale it so I do it in the biggest room because it's airy and so forth just so I can try and see (...) Transporting it might disturb the patterning of the phytoliths and so forth so it's kind of doing the best we can in the field (...) so hopefully we might be getting a fume cupboard which would make everything a lot better.

This narrative alludes to distinctions between the conservation lab and the other work spaces. It is larger, contains cabinets, a counter top and a sink, and also was originally designed to include a fume hood. Because of these features, it is viewed in some ways as a shared work space.

6.5 Summary and Conclusions

This chapter provides several examples of the trading zones for interpretation that are unique to the place, space, and time of activities on site. It is on site that team members are taught how to "see". At this site, a life-size replica of an ancient dwelling translated the project findings into a three dimensional view. Tours of the completed excavation area provided an opportunity for the project director to highlight particular
challenges that the team may have encountered. Discussion of the day’s progress provided insights into emerging issues that project members could immediately address.

Through the application of materials such as cyclododecane or techniques such as block lifting, conservators and archaeologists carefully negotiated their roles, and each role brought with it a special knowledge about the environment, or the behaviour of materials, or the kind of object found and its potential meaning. It was a process that addressed uncertainty by pooling expertise and raising questions. Is the consolidant necessary? Who should excavate the object while the consolidant is applied? How much of the soil block should be removed, by whom, and in what way? What information is the most important to preserve? Clearly for this project, interpretation begins “at the trowel’s edge” (Hodder 2007) not just for archaeologists but also for archaeological conservators. However, each archaeological project differs as we will see in the next chapter.
Chapter 7 – Case Two: Practice and Materiality

The secondary case represents a much smaller sample of the data since the visit for observations and interviews lasted only five days. This was a different type of archaeological site than the primary case, representing a historical approach to archaeology more closely aligned with scholarship of the classics and the field of art history. As such, it was less typical of the type of archaeology practiced in the US. Nevertheless, activities observed presented several examples of trading zones involving objects, their materials, and the material culture of the disciplines.

7.1 Places, Spaces, and Time of Trading Zones

The site in the Mediterranean Region was located within a large metropolitan city in the midst of a busy commercial area. The project planned to buy and demolish some of the adjacent modern buildings in order to excavate beneath them; however, these plans were somewhat controversial. Although these structures were comparatively recent, the community had strong traditional ties to the area.

The total area under the jurisdiction of the project encompassed approximately 12 hectares. During my visit, excavation was concentrated within a section in the northwest corner of the site where investigation had been continuing for the past several years. The currently excavated trenches were located well below the current street level, and adjacent modern buildings on the east and west side towered over it. An alley was visible through the fence on the north side, and on the south side, pedestrians strolled along a thoroughfare lined with stores, restaurants, and café tables. The main entrance to the trenches was through a gated fence to the south, and excavators passed between café tables to approach it. Notwithstanding that the excavation was within eyesight of pedestrians, most gave it little notice.
The area had been excavated by the project since the 1930s, and areas excavated in the past were located in a gated area to the south which was administered by the government archaeological service. The park included many significant architectural monuments, and a fee was charged to enter. Offices for the archaeological project were located within this area in a two-story reconstruction of an ancient building found at the same location. The building was constructed in the early 1950s, and its primary function was to serve as a museum, storage area for recovered objects, and an archive for all archaeological records and publications of the project. Information provided to the public clearly signified that the site, museum, and all finds were property of the government.

During the 6-8 week period of excavation each summer, housing for the trench supervisors and crew was in a dorm approximately a mile away in a relatively up-scale area of the city. Housing for the crew included shared bathrooms, a laundry area, a dinning hall, and computing facilities. A library and recently endowed research laboratory were nearby. The project director lived in an area not far from the dorms most of the year, and for a few months of year, he also lived in the US where he was a professor at a university. The conservators worked in the conservation lab throughout the year, and therefore had permanent residences in or near the city.

Office space for the project included a darkroom, workrooms for researchers, a computer room, a study, library, an area for photography, and space for the trench supervisors (Figure 7.1.1). Large worktables in an open area away from the offices and storage cabinets were used by the trench supervisors as a place to spread out their notes, enter data from the day’s excavation into computer databases, and examine some of the objects they described in their excavation records.

The excavation archives were adjacent to the library and near a room being used for a project to migrate computerized records into a new system. The documents in the archive were impressive, and I was shown several handwritten notebooks of the first excavations. Trench supervisors kept the tradition alive by maintaining handwritten
notebooks for each type of material found, while also entering project documentation to a
computer database using hand-held devices.

Figure 7.1.1 Workspaces in the office building of Case Two

A large table outside of the office area and between storage cabinets served as a
gathering spot for the permanent staff and trench supervisors to eat lunch and break for
coffee or tea. The table was not big enough for everyone at once, so the conservators
made sure that they were finished with their breaks before the archaeologists came in
from the field, and ate lunch after the archaeologists had gone back to the excavation. The
excavation crew took breaks and ate lunch in an area outside of the office building under
the shade of large trees. This area was also used for washing and sorting sherds.

In the early days of the excavation, the primary workspace for conservation was
called the "mending room", and it was staffed by personnel who were not formally
trained but were skilled and respected. Formally trained conservators have been on staff
since 1979, and most conservation activities take place in a fully equipped lab. At the
time of my visit, the lab was staffed with two conservators and a conservation assistant.
Over the past few years, the head conservator has accepted conservation students from various countries as interns.

The conservation lab was located immediately adjacent to the director's office. It was the largest room of all the offices, and had been recently upgraded with new equipment and facilities (Figure 7.1.2). An area of particular pride was a nearby climate-controlled storage room for metal objects that took many months and much ingenuity to complete. One area of the lab contained a refrigerator and a sink, and project staff members came in the room periodically to get their lunches, coffee and tea, or snacks.

![Figure 7.1.2 Configuration of the conservation lab](image)

All excavated objects were stored on shelves or cabinets in the basement or in cabinets outside of the offices. Items were stored chronologically by excavation date and by type. The conservator seemed surprised when I asked if, because of preservation issues, the location of any of these objects might change. She responded that this would not be possible, since researchers using the collection have been doing so for decades, know where things are, and expect them to remain that way. The response reflected her
knowledge about the research style and theoretical orientation of the archaeologists on this project, since objects stored by type are more easily used for comparative studies.

The lab had recently acquired its own photographic equipment and a new computer and space was allotted for both, while most conservation activity took place on a table in the lab’s centre.

7.2 People in the Trading Zones

A majority of the excavators and trench supervisors were American, and the project was operated by the project director with the assistance of a manager for the excavations. Other project staff members included an architect, a secretary, a registrar, a computer consultant, a data management supervisor, and a photographer. The project also included several staff members who were specialists on various types of objects and who were able to add detailed descriptions of some of the objects found into database records. Most staff members were part-time employees.

Trench supervisors and their assistants coordinated the work of the excavators. Most excavators were undergraduate students, although at least one had just completed an MA and was about to begin his PhD. Most of the trench supervisors were graduate students, although one had recently completed her PhD. Some of the trench supervisors and their assistants were not archaeologists, but most had been working at the site for several years. One of the trench supervisors had a PhD in another subject and had come to the project several years ago through a chance conversation with the project director.

During my visit the conservation lab was staffed by three people -- a permanent, full-time conservator, a full-time conservation intern, and a lab assistant who was working on site through a long-term contract. The permanent full-time conservator was the acting head of the conservation lab, and she had been working on the project for two years. The full-time temporary conservator had recently arrived and was to continue her work there for the next several months. Both conservators had been trained in Canada and
had graduate degrees in classical archaeology. The lab assistant was also from Canada and was considering conservation as a profession.

### 7.3 Trading Zones of Activity

The conservators worked in the lab adjacent to the site throughout the year, and their activities varied according to season. Their work focused on new objects uncovered during the summer season when the excavation was active. According to a conservator’s report from the 1990s, most materials recovered from the site were usually composed of clay, stone, glass, or metal. Worked bone or ivory, waterlogged wood, or human bone were found by excavators less frequently. Although the report also noted that animal bone was a relatively rare occurrence, during my visit, excavators told me that bone was quite common, and they showed me several bags from one trench. This was no doubt a reflection of the fact that the current excavation was in a different area of the site than in the 1990s, and that the material recovered from this area represented different time periods or ancient activities or both. Although the bone was collected, to my knowledge it was not “catalogued” for pre-processing or immediate analysis.

After the excavation season ended and treatments of the newly excavated objects were complete, the conservators continued ongoing and special projects for the site museum and its collection. These activities could include working on designs for display cases, desalinizing ceramics, cleaning and stabilizing coins, or other special projects.

I arrived on site during the second week of the excavation season. Although the conservators were very busy in the lab, they took as much time as they could spare to talk with me and provide tours of their work and storage spaces. Most of my time was spent in the lab where a majority of the conservation activities were undertaken. When the conservators were called to the excavation trenches, someone joked that “we get so excited when the conservators have to come down to remove something”. This suggested that an object must be considered particularly significant and fragile in order for the...
conservators to become involved. This fact was verified during an interview with the project director who commented that the retrieval of an object “was the fun stuff” and conservators should not be the only ones who get to do it.

I also spent some time in the excavation area in order to experience differences in atmosphere and workspace dynamics. However, I sensed that my presence caused particular discomfort for some of the archaeologists and therefore limited my time there. I learned later that the project director had been reluctant to allow my visit, perhaps out of concern that I might disrupt relationships between excavators and staff.

It is also possible that the nature of my research was somewhat suspect. As one of the archaeologists stated, “researchers don’t like being researched”. I was also aware that the methodology itself, involving interviews and video cameras, could cause discomfort. Therefore, the reasons behind these reactions may have been complex. Although I explained the details of my research to each participant, my time at the site was limited, and therefore I was unable to build a level of trust that could have eased general concerns. The decision to allow my visit was ultimately left to the acting head conservator. Given the concerns of the archaeologists and my arrival during the busiest time of the year, it was particularly generous of her and all of the participants to allow me to observe their work and ask questions.

The normal work day for the crew began at 7:00 a.m., with a break at mid-morning, a half hour lunch at noon, and excavation continuing until 2:00 p.m. After the excavation day ended, there were sometimes lectures for excavators. On one occasion a lecture was given on ceramic types, presumably to help with the sorting of pottery sherds. All pottery sherds were washed, but due to the large number of them found on site, only the diagnostic pieces were sorted and “catalogued”. All of the excavators were required to spend some time washing pot sherds, which suggested that this was a task many found tedious and hoped to avoid.
Much of the excavation data was entered directly into hand-held devices or notebooks in the field. After 2:00 p.m., the trench supervisors entered additional details from the excavation into the database and notebooks. Some of the excavators visited the conservation lab during this time to see particular objects they or others had found. One excavator was volunteering in the lab to gain the experience, but he said he also found this type of work interesting.

The workday for the conservators usually started and ended later than the trench supervisors and excavators, but this could vary based on the needs of the excavation. In one instance the conservators arrived on site at 7:30 a.m. in order to begin a lift during a time of the day when sunlight was less intense and the object’s outline in the soil was easier to see.

7.3.1 Lifting Metal Objects

Since the conservators were rarely called into the field, I was fortunate to be present when several bronze objects were discovered that required the conservator’s expertise. Metal objects received particular attention, because they were more likely to deteriorate and therefore were less likely to be found in the archaeological record. Although it was unrecognizable to all others, the project director immediately recognized the potential significance of one of the objects discovered and asked the conservators to intervene.

After examining the object’s location in the trench, the head conservator decided to engage the archaeologists in the process of lifting it; perhaps as a way to save time, but also as a way to show the archaeologists a technique for lifting fragile objects. She asked the trench supervisor if he would be willing to assign a crewmember to help her excavate around the object in preparation for removing it. The supervisor chose an experienced excavator who he knew took particular care in the trench. She had recently demonstrated her skills and good judgment when she discovered a glass object, carefully covered it
from the sun, and then called in the trench supervisors for advice. Later, I discovered that she had taken classes in museum studies.

The conservator then discussed her plans to excavate around the object with the trench supervisor, to assure that she would not disturb any important stratigraphy. Since the object was found in the middle of a path to other trenches, she also considered the fact that excavators would need to negotiate their way around this activity.

Before beginning, the conservator explained her plan to the crewmember by pointing out the boundaries of the cut which would result in a circular segment of soil surrounding the object. The conservators and the excavator carefully dug a tiny trench encircling the object, and at a depth of a few centimetres they wrapped the sides of the block with an ace bandage. Excavation then continued carefully, and as the conservators dug deeper they supported the soil block with wads of tissue paper. As the process continued, various crewmembers stopped by to ask questions.

When the conservators were convinced that their trench was deep enough, they began to carefully undercut the soil block. This was a step with some risk since the excavator must anticipate the object’s depth in the soil, and the cut beneath the block must be complete to the other side. If the cut was not deep enough the object would not be recovered intact, and if the cut beneath the soil block was not complete, the soil would not lift up and out in one piece. The importance of this step was highlighted by the fact that the conservator repeatedly placed the excavator’s hand under the soil block to show her how to judge this by feel, and she repeated this process with two of the trench supervisors.

When the soil block was ready to lift, the conservator asked the assistant trench supervisor if her crew could be allowed to watch the lift. Many of them watched as the conservator explained her rationale for the process so far:

So what we’ve done is we’ve just as you can see...cut around and actually undercut (...) this big pile of dirt. The object is only in the upper layer...because it was probably sitting right on the road so you can see this is where
the road surface was. We...cut underneath the dirt as well so we can lift the entire thing (...) and as we were...excavating around it we wrapped it with bandages and then we took little dental tools and smaller tools and cut right underneath. And as we were cutting underneath we supported it with tissue as well (...) and then [the student archaeologist] was just picking on this side (...) and the whole thing moved. So it means it's ready to be lifted.

The conservator then carefully slid a sheet of smooth plastic under the block of earth and, with the help of the other conservator, used the plastic sheet to lift the soil block into a box lined with tissue paper. The rest of the conservator's narrative explained how this particular lift differed from others:

We didn't have to do the plaster (...) because the soil is actually really super compact. But what we could have done...if the soil was soft and it was moving and we were worried about it what we would have done is put a piece of Saran Wrap over top, some cotton batting around, and another piece of tin foil. And then we would have...brought some plaster down to make up with water, and we would have cut gauze strips, dipped them in the plaster, and wrapped them around, let it set to give it a really nice hard core, and then continued as we did to excavate underneath, and then lift the whole thing in a hard block. And then we would have taken it up to the lab, and we would have had to cut through and chip through the plaster and take everything off in pieces...But because it's a bit aggressive as well removing the plaster bandage (...) because the soil was so compact we were able to do it just (...) as with this. And also we actually wrapped the bandage right (...) underneath the object as we were doing it.

Although metal finds were considered significant, small pieces of metal were a low priority for collection because the archaeologists believed deterioration was inevitable. However as an experiment, the head conservator asked the crew to place metal and glass objects in small plastic containers with silica gel. The project had not adopted this technique as a regular procedure, but the conservator believed that her attention to the impact of the environment on these objects had it made an impression, since archaeologists had since started to place newly excavated metal and glass out of the sun and in the shade.

7.3.2 Record Keeping

Site documentation for the current excavation was accomplished through a mix of new and traditional strategies. Trench supervisors used small hand-held devices to record
site data, and this was later downloaded into a personal computer. One of the trench supervisors told me that this method has made a tremendous difference in the interpretations she makes at the end of the day. She told me “now I see data”.

However, since the beginning of the project in the 1930s, handwritten records about the excavation and objects found were kept in bound notebooks, and the project director felt strongly that this was an important tradition to maintain. The project registrar gave me an overview of the system for archiving handwritten records that involved separate notebooks for each section of the excavation, as well as separate notebooks for significant finds, coins, and pottery. All notebooks were manually cross-referenced not only to each other but to any published documents citing information in them. The notebooks comprised an impressive historical record of the excavation, and they often came up in discussion with the archaeologists.

One trench supervisor spoke of them almost in reverential tones, while others delegated the task of maintaining them to assistants. One assistant noted that compiling handwritten data in the notebooks could be a bit tedious, but he enjoyed looking through notations of past excavators and believed that this method preserved significant information about the archaeologists themselves. In fact, he found the notebooks so interesting that he was using them as a source for his own research. When I asked if conservation work is ever mentioned in these books, he immediately turned to an illustration drawn by an archaeologist of an area in a trench where conservation work had been done.

A catalogue containing approximately 85,000 cards describing significant finds also existed, and a series of grants funded the conversion of the manual catalogue into a computerized database. Originally, only standardized descriptive data was transferred to the computer system. However, the project manager later realized that notations added by researchers were also significant, and she retraced her steps to include this information as well. The database manager commented that computerization forced the use of
standardized terminology and more specific descriptions rather than "a box" or "a bag" or "a tin". She also noted that the current process for site recording had shifted the process from a team effort to one accomplished through the individual efforts of the trench supervisors and their assistants.

A separate catalogue of information on approximately 100,000 coins was also added to the database during a special project. This data had been handled separately since the beginning of the project in the 1930s, and according to the project manager, it was generally more descriptive and specific, since it was usually entered by numismatists.

Although the new database could provide a "view" of conservation records, these were created in a separate database. Records could not be created until objects received accession numbers, and these were not given to objects until after conservation was complete. Interestingly, the database designer and manager of the data conversion project had worked on conservation projects in the past, and she considered conservation data background information useful "if someone wants to know how something was treated". Her view was that conservation data was different than archaeological data because it used more descriptive text and required different measurements — dimensions before and after treatment, for instance.

The conservators seemed content with the current system for conservation recording. In fact they were particularly enthusiastic about new photographic equipment that enabled them to more easily integrate photographs with condition and treatment reports.

7.3.3 Washing and Sorting Sherds

I was able to spend a brief amount of time with some members of the excavation crew while they washed pieces of ceramics (sherds) that had been recently excavated. At this excavation, some ceramics of a specific type were placed directly in storage without cleaning so that future analysis would not be comprised. Otherwise, uncatalogued items
were washed by the crew and catalogued items were washed by conservators. Items were catalogued if they were significant enough to be published in a report or article. Some uncatalogued ceramics were not suitable for publication but were significant for dating purposes. This was particularly the case if they were found in “sealed” or “closed” deposits -- that is, areas such as wells or cisterns that most likely had not been disturbed since antiquity.

Washing and sorting sherds was an activity in which all the excavators were required to participate but which most regarded with little enthusiasm. It was undertaken in a shady area outside of the building containing the museum and office spaces, near a door leading to basement storage. Since the area was shady and near water, it was also where the excavators usually ate lunch. Perhaps because the trench supervisors and their assistants generally ate lunch elsewhere, the atmosphere seemed particularly relaxed.

Sherds were washed in tubs, and when washing was complete, the tub water was emptied over a screen to catch tiny pieces. Diagnostic pieces of ceramics were left on tables to dry while the rest were placed in tins.

While I helped to wash sherds, I talked with one of the excavators who had just finished his MA and was preparing to take exams for his PhD. His interest was in North American archaeology and he was finding this excavation experience quite different than any others in which he had participated. This was due in part to the nature of the site and its context, but it also differed, as all archaeological projects do, according to the objectives of the project director, the procedures set in place, and the dynamics of the team.

7.3.4 Finding Coins and Using Gloves

At this archaeological site, copper and bronze coins are relatively common and during my short visits to the trenches several were recovered. In one instance, a small coin was found as the conservator carefully excavated around an object while preparing
to lift it. Notwithstanding the fact that coins are relatively common, they are considered significant and are therefore mapped, recorded, and collected. However, this has not always been the case for some archaeological projects in the past.

Rotroff (1997) mentions a “break and discard” rule that was advocated until the late 1970s. During this time, a popular method for cleaning coins involved using a solution of sodium hydroxide and zinc. Rotroff explains the history of the process at one site:

[the process] removed all corrosion products, stripping the coin down to the surviving metal. In those days many coins simply melted during the cleaning process, and excavators were regularly advised to "test" coins by trying to break them...however, [since] 1979, with the arrival of a trained conservator...coins have normally been cleaned mechanically under a binocular microscope. This procedure can recover and preserve the image even on a heavily corroded coin. On a recently cleaned coin...for instance, surface detail of the reverse is preserved in the corrosion products, malachite and cuprite, which would have dissolved if the coin had been treated chemically (Rotroff 1997, 10).

Even though more coins are kept now than in the past, some scholars still advise discarding coins that are “illegible due to corrosion from surface or mixed fills, or unstratified levels. They serve no useful purpose except to clutter up space” (Walker 1997, 26).

Given this “survival of the fittest” approach in the past, it is perhaps not surprising that the idea of wearing gloves to handle coins appeared to meet some resistance. Wearing gloves seems to be a particular issue of significance for this project since it was mentioned on several occasions by the project director and some of the crew. I sensed that perhaps the issue had created tensions in the past between the archaeologists and the conservators. The conservator commented that she was reluctant to press the issue for many reasons. Nevertheless, she made it a point to leave boxes of gloves in the field, and crewmembers appeared to bear this in mind. One crew member who came into the lab asked, “Should I wear gloves?” then commented, “Oh, it’s lead”, referring to the fact that he, rather than the coin, could be harmed by touching it without gloves.
7.4 Summary and Conclusions

The secondary case presented a different context for interaction between conservators and archaeologists. Although conservators were present during the excavation season, they were not often “in the trenches”. More commonly, the archaeologists excavated all but the most fragile objects themselves. This may, at least in part, be a reflection of the project director’s belief that conservators should not be privileged to retrieve artefacts.

Conservators’ work in the trenches was in reaction to requests for immediate assistance with objects of particular rarity and significance, and the conservators used these events to share knowledge of techniques. For instance, a request for help with a bronze object provided an opportunity to show the archaeologists a method for lifting an object within a block of soil. The conservator explained her process and rationale with great detail, which suggested that this was a skill she hoped the archaeologists would use themselves.

Another impact of conservation on archaeological practice involved beliefs concerning the deterioration of metals. In the past, some small metal fragments were not collected by archaeologists because they believed that they would not survive from the trench to the lab. However, the conservator’s experiments with silica gel and small plastic containers had demonstrated the dramatic effects of the environment on objects, and had motivated the excavators to shade metal and glass objects from the sun.

The past two cases have provided examples of conservators and archaeologists working together as objects and architectural elements are discovered. The case to follow presents very different types of activity.
Case three included the smallest data sample and represents observations of activities at an archaeological site in the US over a two-day period in 2003. Unlike the other cases, activities at this site did not involve ongoing excavation or the retrieval of objects. Instead, I observed discussions to develop a computer database on the first day, and activities involving a reburial project on the second day. This case presents examples of several trading zones between the disciplines, particularly those involving procedures.

8.1 Places, Spaces, and Time of Trading Zones

The setting for case three was within a national historic park which encompassed approximately 14,000 hectares and was surrounded by lands of a local indigenous community. The park included a region of steep canyons within a “high desert” landscape characterized by long winters, short growing seasons, and little rainfall. The nearest store for supplies was a small town approximately 62 kilometers south, and access to the park was through either of three long, unpaved access roads. Over 4,000 sites have been recorded within the park, and forty of them have been partially excavated. According to park managers, one hundred and fifty large earth and masonry structures within these 40 sites require preventive treatment each year.

The road serving as the main entry point for most visitors was paved a few kilometres before entering the park from the north, and discussions were in progress about paving the rest of the road leading to the main highway. Campgrounds, a visitor’s centre, and housing for park employees were built from 1956-1966 and were within the park. Many archaeological sites were a short walking distance from the visitor’s centre, and others were located along hiking trails in outlying areas and on mesa tops above the canyon.
The area’s remote location from city lights made it a popular place for star gazing, and park interpreters provided regular lectures on this topic while drawing upon Native American sources of knowledge on the topic. An amateur astronomer recently donated a telescope to the park and also subsidized the construction of an observatory next to the visitor’s centre to house it.

Archaeological sites within the park represent a time span of approximately 10,000 years of nearly continuous use or occupation. Many clans traced their ancestry to the area, and pilgrimages were still made to honour ancestral homelands. Representatives from neighbouring tribes served on a consultation committee that met regularly with park staff to discuss management issues.

Administrative activities were coordinated out of the visitor’s centre which included offices for the archaeologists and other park staff as well as exhibition space and a small bookstore. Visitors also came there for permits to travel in areas off the main paved roads.

Archaeological sites in the park have been excavated since the 1890s; however, the particular site where my observations took place was first excavated in 1920. From 1971-1982, the National Park Service collaborated with a local university to undertake extensive research of the area which involved surveys and some excavation. However, excavation of sites in the area has recently been limited due to shifts in archaeological practice away from large-scale excavation projects. The park also attempts to respect local Native American beliefs that where possible, sites and remains should be left to return naturally to the earth.

The first site preservation work in the park was undertaken from 1933-1937, and in 1980, a joint project was initiated with other government agencies and the local indigenous community to protect sites in the area. In 1992, the park began a collaborative project with a non-profit organization to examine methods for protecting architectural features through reburial.
Park lands were deeded to the government in 1949 by a nearby university which had been involved in collaborative research projects with the park service since the 1920s. The collection of artefacts and associated documentation were located on the university’s campus approximately 260 kilometers away. Artefacts were stored in the university’s anthropology building and comprised a wide range of materials including ceramics, stone and bone tools, fibre matting and sandals, shell and turquoise ornaments, corn cobs, animal remains, and various soil, pollen, and wood samples.

Associated documentation was located in the university’s research library and included the site excavation records and field notes, analytical reports, slides, manuscripts, photographs, maps, and ruins stabilization records.

The visitor’s centre provided office space for the archaeologists and other park staff. One of the larger offices provided space for storage of equipment, filing cabinets, and meetings. My first day’s visit was spent in this office, and the second day’s visit was spent at the site approximately one kilometre away where the reburial project was undertaken.

### 8.2 People in the Trading Zones

Participants from the first day’s activity included some of those who would use or contribute to the development of the archaeological database -- the park’s curator of artefacts and archives, the park archaeologists, a computer consultant, and an archaeologist employed by one of the local Native American communities. Two of those at the meeting were from an archaeological centre nearby and were there to share their experiences with the development of a similar system. Since the park was so remote, most participants drove long distances to attend the meeting and left immediately upon its conclusion. There were no conservators present.

The primary participants in this case study were those from the second day of activities -- park archaeologists and a conservation team from the non-profit
organization. The park archaeologist present during most of the activity was a senior staff member who was managing the project and had been with the park for many years. She lived on site during the week and commuted to her home several kilometres away on the weekends. The other archaeologist joined the group of participants near the end of the activity. Although an experienced archaeologist, he was relatively new to the park, having been added to the staff a few months earlier.

The conservation team included an archaeologist who was also trained in preservation and a senior conservation scientist. Both had been working with the non-profit organization for many years and had managed many conservation projects.

Also present but not directly involved in discussion were members of the local indigenous community. Members of the community have been involved in preservation work in the park since 1937, and some of the current crew were second generation stonemasons at this site. Work near archaeological sites is usually avoided and considered dangerous to the community since “Places where people once lived and died are treated with great respect and left alone. One does not go there, or they risk harming themselves and their families” (Two Bears 2003, 20). Notwithstanding these concerns, the community operates its own Historic Preservation Department which is funded by the tribe, various contracts, and grants from the federal government.

According to a National Park Service report, the park archaeologists and resource managers at this site work with a staff of twelve preservation specialists who are members of the local indigenous community.

8.3 Trading Zones of Activity

During the first day of my visit to the site, I was an observer at a meeting of archaeologists who were discussing the early stages of a project to integrate park documentation into a database. Some of the participants were members of other federal agencies who were sharing their experiences on similar projects and providing advice.
This meeting appeared to be a very preliminary step to gather ideas about how to move forward with a database design. Discussion focused on very broad topics about the management of documents, rather than on how the database could be used for interpretation. Conservation documentation was never specifically mentioned in the discussion, although in comments to me before the meeting, one of the archaeologists mentioned that the entire project was a way to “preserve the archaeological record”.

Comments from one of the participants suggested that access to information about the archaeological sites was a source of tension. Indeed, confidentiality of information is an important issue for the indigenous community who “refuse to have their archaeological site information entered into state databases and instead have their own databases...[which are] managed and controlled by the tribe (Anyon et al. 2000, 138).

Issues relating to information access are often a source of tension between many indigenous communities and archaeologists (Bryne et al. 1995). For instance, Ferguson et al. (1995, 1995a) describe a collaborative project with the Hopi who consider clan history and ceremonial knowledge to be information that should be highly guarded. At the conclusion of the project, release of the final report was accompanied by a caveat that it could “not be copied or used for scholarly purposes unrelated to project management without written tribal permission” (Ferguson et al. 1995a, 13).

In this instance, tensions also involved access to archaeological information collected in the past which was kept at a location distant from the park. Also, since excavation within the park had taken place over many decades and through several projects, it was a challenge to synthesize. The objective of all of the participants was to make access easier by integrating this documentation using a Geographic Information System (GIS). However as Anyon et al. note, “the tribal need to keep information private is at odds with the professional ethics of archaeologists to share what they learn with other scholars and the public...How this conflict will ultimately be resolved is an issue that is still being negotiated” (2000, 138).
During the morning of the second day, I observed activities related to a collaborative project between the park and a non-profit organization to continue the implementation of a plan to protect exposed earthen architecture through reburial. Earthen architecture was particularly susceptible to deterioration from water that accumulated from melted snow and rainfall. Damage could be caused by melted snow that accumulated on the top of walls, percolated into cavities, and then froze, causing the masonry to buckle. Water from melting snow and rain at ground level could rise through the walls through capillary action. Areas of a structure with one side of a wall reburied but with the other side exposed was a particular problem. In these instances, water in soils on the buried side of the wall migrated laterally to evaporate on the exposed side of the wall, and consequently, soluble salts formed that eroded the wall.

The concept of backfilling is not new to archaeology, and in fact as several scholars have noted, the technique was listed in the 1931 Athens Charter among various methods of site protection. Several of the sites within the boundaries of the park were backfilled after excavations in the 1890s and 1920s. As Demas (2004, 137) notes, backfilling is in a sense an “intuitive” strategy.

The premise for reburying sites in order to preserve them is that by doing so the otherwise exposed architecture and objects left in situ can be returned to environmental conditions as close to equilibrium as possible. However, as Caple (2004) notes, soil is a porous medium that rarely achieves equilibrium. Processes such as microorganism activity, the water, evaporation and ground water movements ensure that it is in a state of constant change. In particular, the cycles of wetting and drying, either caused by rising ground water or by surface water percolating down through the soil, ensure that most soils containing archaeological remains have variable levels of water content, dissolved salts and oxygen (Caple 2004, 155).

Therefore, simply covering the site with the excavated soil is sometimes not enough.

Reburial “implies both a broader range of conditions under which a site is covered and a more methodological, designed approach” (Agnew et al. 2004, 133). A similar term often used in the archaeological literature is “capping”, defined as the “placement of an
engineered protective covering designed to enhance the long-term preservation of the resource (Demas 2004, 152 citing Nickens 2000, 309).

Reburial had been chosen as the preferred preservation strategy for sections of some sites in the park after a reassessment of various preservation strategies in use since the 1920s. Originally, eroded mortar joints, stones, and deteriorated wood were replaced with “in-kind” materials. However, as time progressed, maintenance cycles inevitably shortened, and at the same time, funds for this work decreased. Attempts to lengthen maintenance cycles by using longer-lasting modern materials often hastened deterioration of the softer native materials surrounding it.

According to a report, several site preservation alternatives were proposed in the 1980s reassessment, including the use of shelters, continued replacement of eroded stones and mortars, and deferred maintenance for sites that were not visited by the public. All of these strategies were deemed viable and appropriate on a case-by-case basis, but park officials considered partial reburying of selected sites as the best alternative in consideration of their overall significance, condition, and management needs.

Nevertheless, the decision to rebury a site can be controversial. As Demas notes:

However beneficial reburying may be from a conservation perspective, it is generally viewed with skepticism or disfavor by those with legal authority over a site, and by those stakeholders who want access to the site for study, education or money-making (Demas 2004, 137).

The park management therefore consulted with various stakeholders including the State Historic Preservation Office, the general public, and special interest groups, and received support for the project as long as “access to resources was not severely limited”. According to a project report, descendant communities preferred “benign neglect” since this is an approach more in keeping with traditional views that structures are meant to “return to the earth” (Gillette 1992). The proposal to rebury sites was viewed as a more passive intervention to their ancestral places.
Collaboration between the park archaeologists and the non-profit organization began in the 1990s with research and testing. One of the goals of this research was to determine appropriate burial environments for particular types of architecture. In order to do so, research began with examination of the condition of sites that had been excavated at the turn of the 20th century and “backfilled” shortly thereafter. Upon re-excavation of these areas, researchers found that stone, mortars, and plasters were well preserved, but that wood had degraded, particularly where it occurred in the upper 30 centimeters of fill. Wood with rot and termite infestations was more commonly found in the upper levels, and the lower levels of fill contained higher moisture content.

Another goal of the research was to test geotextiles and geodrains -- specific types of materials that could be used to eliminate or reduce moisture in the fills. Both horizontal and vertical drainage systems were tested to accommodate different site conditions. Some sites had never been excavated and a horizontal geodrain covered with gravel was tested for use under these conditions. Other sites were excavated and parts of them were to remain uncovered for interpretive purposes. A vertical geodrain was tested for specific conditions in particular areas, and results indicated that although horizontal drains worked well, vertical drains were more problematic.

In general, the reburial plan for the park involved equalizing levels of fill within structures as much as possible and keeping the fill as dry as possible by using various drainage systems. The fill was made of locally available soils and placed on top of geotextile sheeting. This approach worked well for structures with stone, mud, and plaster; however, methods to preserve wood required further testing. The activities I observed constituted part of the evaluation phase of one such area with special concerns.

The total area of this architectural complex encompassed 1.2 hectares, and researchers believed that during its 100 years of occupation in the 11th and 12th centuries AD, it was at least four stories high. This complex was of particular interest to the researchers because of the large number of wooden elements that remained. These
included roof and ceiling beams, door and vent lintels, and, in some instances, original ceiling and wall construction.

The site was excavated in the 1920s and 1930s, and since then it has been left open to the effects of many wet-dry and freeze-thaw cycles. In 1947, one section collapsed when it was struck by debris from a flash flood, and although it had been repaired and stabilized, it remained weakened.

The goal of the current project at this site was twofold: to test methods for reburying sites in a way that would allow for continued interpretation, and to train staff on techniques that could be used elsewhere, particularly at sites with large concentrations of wood.

The reburial of this site began in 1994 and continued in two phases at two separate areas of the site until 1997. Due to issues involving funding, logistics, and monitoring, the first reburial phase in the eastern-most area of the site was implemented in several stages over a period of two years. The second reburial phase in an adjacent area was undertaken in one year, and work was able to proceed in one continuous stage. According to a project report, the following strategy was used:

1) A layer of permeable geotextile was placed over the surface of existing fill;

2) Locally-available fill was added to approximate the height of the ground surface;

3) Beams and poles protruding from the walls were covered to provide a barrier between the wood surfaces and fill. Three methods were tested: covering beams with an impenetrable membrane, then wrapping them with a webbed matting (Enkamat®); wrapping beams with Enkamat, then covering them ¼ of the way with Tuff-Ply membrane; wrapping beams with a Typar®, a permeable geotextile;
4) PVC drainage pipes were installed in the upper levels of the fill to move
surface water to drains outside of the structure;

5) Once the fill surface was graded and compacted, impermeable membranes
were placed on the surface. Areas of drain inlets and monitoring ports were
not covered, but the membrane was sealed around them. Edges of the
membrane were turned up against the wall to keep moisture from seeping
underneath it;

6) Enkamat was placed over the membrane to protect it and to hold the final layer
of soil;

7) A layer of soil 20 to 50 cm deep was placed over the membrane and graded in
the direction of the drains.

Soil moisture was monitored at 30 cm intervals to a depth of 2 m through vertical PVC
pipe "ports" into which a capacitance probe was placed. In addition, moisture in several
rooms was also monitored by using electrical resistance blocks and temperature sensors
connected to data loggers.

Although evaluation of the condition of the reburied wood was planned for 2000,
it was accomplished during the winter of 2002 and the summer of 2003. During this
evaluation phase, wood samples were observed for microbiological decay and termite
infestation, and soil samples were taken to determine moisture content during the wet
winter and dry summer seasons. During the winter season evaluation, the fill and
membrane covering was removed in several areas of the site, and wooden beams were
examined by comparing them to photos taken prior to reburial. The membrane and final
soil layer was then replaced. During the summer season, the remaining beams were
evaluated and further soil samples were taken above the membrane.

The results of the evaluation showed differences in the success rate of the
technique according to the phase of the project. Areas reburied during the earliest phase
of the project did not survive as well as those undertaken later. According to one of the
project reports, the researchers believe this was due to several factors having to do with techniques of implementation: the membrane punctured when installed; a gap between sections of membrane; drainage catchments that were too large; voids in the fill from clay clods; and the fill exposed to snow and rain before the reburial was complete.

My visit coincided with some of the final tasks relating to the summer 2003 evaluation and the subsequent refinement of the reburial design and techniques of implementation. Improvements were made in the drainage system, the membrane, the fill, and the specifications for installation. Drains were repositioned, another drain inlet was added, and a drain inlet was perforated and wrapped with geotextile. Fill was sifted to remove clods, and levels were raised if possible and also re-contoured. Specific instructions were also written for the installation crew to explain the reburial design, the function of the membrane and how to test for leaks, and the appropriate tools to use when the membrane was in place but not yet covered by remaining fill.

During my observations, the final touches of this redesign were under way, and members of the project from the non-profit organization were making a brief visit to see how the work was progressing and to offer any necessary advice.

The initial focus of attention for the team was whether or not the level of fill was appropriate. Everyone agreed that more fill should be added, but there was some debate about whether it should cover a particular architectural feature. The archaeologist preferred not to cover the feature, but the conservation scientist felt that the fill should go higher, and stated that, if necessary, the architectural feature could be uncovered. Ultimately, the team decided to raise the level of the fill to just beneath the architectural feature.

Another focus for the team involved monitoring the fill’s moisture content. This was accomplished by creating “ports” through which a dielectric probe could pass to measure moisture levels. The ports were vertical plastic pipes covered with textile that
were placed in various locations of the reburied structure. Moisture readings were taken at
regular intervals during the rainy season, and the ports were capped when not in use.

Ports needed to be placed in areas where drainage conditions differed but where
architectural elements would not be damaged. The conservation team relied on the
knowledge of the archaeologists about the location of buried walls, as well as where they
had seen moisture collect during the rainy season. As the conservation scientist looked for
appropriate spots for the ports, he asked how deep the archaeological features would be.
He suggested placing one port at the intersection of two horizontal drainage pipes.
However, the archaeologist considered this too risky.

In several instances, interchanges between the archaeologists and conservation
team involved specifics about local architectural traditions. As we approached the site, the
archaeologist pointed out ancient man-made ramps that provided access to the mesa tops
above the canyon floor. As we walked away from the site, she also pointed out holes for
ceiling timbers in the rock face.

8.4 Summary and Conclusions

Although this case represents a very brief period of observation, it provides an
example of two trading zones of activity regarding processes and procedures: one related
to processes of information management, and the other involving processes to rebury
sites.

The trading zone for information management involved the exchange of
perspectives on what "information" is and how it should be used. For some, information
was the physical manifestation of the activities undertaken during the course of the
archaeological research. For others, it was what could be interpreted from the integration
of this material in the particular format of a GIS. From the indigenous perspective,
information was something to be guarded.
The other trading zone involved processes to bury a site rather than to excavate it. The conservation team provided its knowledge about experiments with geotextiles, drainage systems, and environmental monitoring, and the archaeologists contributed their expertise about ancient architecture, the location of stratigraphic sequences at the site, and perspectives about what was necessary to leave visible for the purposes of interpretation.

Notably, the case not only provides examples of potential trading zones for the exchange of knowledge between archaeologists and conservators, but with indigenous communities as well.
Chapter 9 – Case Four: Presentation of Practice
Through Conference Activities

I have combined multiple small cases into a fourth case, where members of the disciplines presented their research and discussed relevant issues at professional meetings among their peers and others. Four different settings were represented: an international archaeological conference, a conference of American archaeologists, a tour of a conservation lab during a conference of American conservators, and a conference on archaeological conservation. All of the meetings were held in North America from 2003 to 2005, and with the exception of the international archaeological conference, a majority of the participants were American.

9.1 The International Archaeology Conference

The 2003 international archaeology conference was held in the US for the first time, although a smaller, regionally-themed “inter-conference” was held in the US more than a decade earlier. This was not a particularly popular venue for many members of the sponsoring organization, since a military campaign by the US into the Persian Gulf was imminent. As a consequence, many members boycotted the meeting by choosing not to attend.

The primary sponsor of the meeting was an archaeological organization that had been in existence since the mid 1980s and was well known for its progressive political stance on human rights. These aims involve efforts to bring members of indigenous communities to the meetings and to include representatives from these communities in its main governing body. The organization operated without permanent funds and full-time staff, but nevertheless published several book series, three journals, and an electronic newsletter by raising funds as projects arose.
The conference had two co-sponsors: a newly created US national museum, and a non-profit conservation organization located in the US. Neither institution had previous involvement with the organization, and the conservation organization may have been unfamiliar with the archaeological organization’s ideological stance.

Some participants commented that the scheduling of the conference was unusual because of its duration and the fact that sessions began on a Sunday. The conference schedules also left a day open in the middle of the week to provide participants with a chance to visit nearby libraries, research institutions, museums and archaeological exhibitions, and participate in tours.

The conference venue was a small, private university, and the meeting began with a formal opening ceremony in one of the university ballrooms. The ceremony included brief remarks by the conference sponsors, a traditional Native American blessing, and music by a local choir. The ceremony was followed by a less formal reception where participants could meet old friends, make new professional contacts, and talk informally.

The following day, the “academic program” began with conference sessions organized by theme. In many instances, the presentation of papers and discussion within these themes continued over the course of several days. Each themed session was held in a different location and ran concurrently with others. Since some of these sessions were held in distant buildings, it was difficult for participants to navigate between themes, and some session participants commented that because of this, there may have been less of a chance to exchange ideas.

Sessions were designed to be participatory by providing time for discussion after papers were presented or by organizing panel discussions. Plenary sessions were held on most days after lunch, and several public lectures were also presented in the evenings by participants at various locations throughout the city.
Another unusual characteristic of the conference was that at the end of the final day, a general session was held where themed session organizers presented draft resolutions for comment from the general membership. If members agreed, these drafts were submitted to the organization's council to be considered as a formal instrument representing the collective views of members. The intent was for these resolutions to influence world-wide policy regarding archaeological practice. This general session provided me with most of the data for my research from the conference.

Several draft resolutions were presented at the final general session including one from the sponsors of the themed session on conservation. The resolution stressed the importance of incorporating principles of conservation in archaeological projects. Comments from the membership focused on specific words describing the nature of the involvement of indigenous communities. In particular, some members felt that the involvement of indigenous communities should be a requirement, not a suggestion. Others believed the resolution required language stressing the authority of the indigenous communities themselves to choose whether or not conservation and archaeological projects were undertaken.

After approximately 30 minutes of discussion, the majority of members agreed that the conservation resolution should be submitted for review by the council. After approximately two hours of discussion about resolutions and issues, a brief ceremony with traditional Native American music closed the conference.

To date, papers from at least two of the themed sessions from this conference have been published. One of the publications appeared as part of a book series of one of the sponsoring organizations.

9.2 The National Archaeology Conference

The location of the national conference of American archaeologists shifted each year from the East Coast, to the middle states, to the West Coast, and occasionally north
and south of the US borders. In doing so, the organization acknowledged current and prospective new memberships throughout the US, Canada, Mexico, and Central and South America. The year of my visit, the meeting was held in Montreal, Canada.

The conference was the annual meeting for the sponsor, an archaeological organization originally formed in the 1930s. The organization considered itself international, and stated in public documents that it was dedicated to “research, interpretation, and protection of the archaeological heritage of the Americas”. Members were not required to be professionals, and since its beginnings, the organization has included avocational enthusiasts. In the past, most of the professional membership was affiliated with academic institutions, and to a lesser degree, government organizations and museums. However, recent surveys have shown an increasing number of professional members from the private sector. The surveys have also shown increasing numbers of professional members who are female, but otherwise, diversity was not well represented. The organization claimed a membership of more than 7,000 members, and it was predominantly white and middle class despite the organization’s efforts to build a more diverse membership through scholarships and special programs.

Seven paid staff members supported the administrative activities of the organization, and members participated in over 50 committees, subcommittees, task forces, and discussion groups. Twelve members served on the board of directors.

Three periodicals and an electronic newsletter were published by the organization. Monographs were also published, some of which consisted of collections of papers which appeared previously in the organization’s journals. Other monographs published results of studies on the archaeological profession which were commissioned by the organization.

As was usually the case for the annual conference, workshops and meetings of special interest groups and committees proceeded the technical sessions, and an opening reception was held before the first day of the program. This activity served to bring friends together, as a way to be introduced to peers, to discuss current projects informally,
or to create professional networks for future career changes. The latter was also aided through postings for employment on conference bulletin boards, and the fact that prospective employers used the conference to screen and interview candidates.

A keynote session prefaced the series of technical sessions which ran concurrently and were organized by themes often relating to geographical regions. However some themes involved topics related to particular types of finds and sites or special techniques. A few addressed theoretical and practical issues in archaeology.

The conference in Canada represented the first time that a session had been organized by archaeological conservators, and it was during this event that I collected data for my research. According to the session organizers, the intent of this session was to provide examples of collaboration between archaeologists and conservators, and to illustrate how the work of conservators can contribute to the work of archaeologists. Notably, the concept for this session was initiated by young archaeology students who had worked with conservators. Nevertheless, most of the papers were presented by conservators, although some included archaeologists as co-authors. Several papers addressed conservation treatments, and a few attempted to situate this work within the broader context of an archaeological project.

At the end of the session, a professor of archaeology summarized and commented upon the papers presented, as did a conservator from a national museum. The conservator also took the opportunity to talk about her own work on an archaeological project. There was little discussion after the papers were presented, and few archaeologists attended the session.

Since this conference, several conservators have presented papers at conferences sponsored by this organization. Rather than organizing a special session, however, the conservators presented their papers in sessions on archaeological topics. For example, the 2006 annual meeting of the Society of American Archaeology (SAA) included five conservators discussing work at two different sites in Latin America (Beaubien 2006,
Magee 2006, Miller 2006, Rainer and Bass 2006) and five conservators presenting work at different projects in the US (Cerveny 2006, Piechota 2006, Rexroth and Adovasio 2006, Smith 2006). In at least one instance, a great deal of discussion followed the conservator’s presentation.

9.3 The National Conservation Conference Tour

The annual meeting for the organization of American conservators was held in 2003 on the East Coast of the US. A location on the East Coast was used most often for the annual conference since the sponsoring organization believed more members would attend. Interestingly, participants of an annual meeting held recently on the West Coast commented that the number of attendees was impressive. Whether or not these figures were impressive enough to influence the location of future meetings remains to be seen.

The meeting’s sponsoring organization was founded in the late 1950s and claimed to be the “only national membership organization in the US dedicated to the preservation of cultural material”. It was an organization with a membership of over 3,000 including conservators, educators, professionals from allied fields, and members of the general public. Many members were from outside of the US. A foundation associated with the organization supported education, research and outreach, as well as funding for professional development activities.

Several membership categories existed. Most members fell within the “Associate” category. However, there were two higher status categories, each associated with greater levels of involvement in the field: “Professional Associate”, and “Fellow”. Those wishing to hold Professional Associate membership were required to be sponsored by three members who were already Professional Associates. The applicant was required to show a sufficient combination of formal education, training, and experience, although applicants without formal training could request a waiver. The organization also required
a two-hundred word essay which addressed how the applicant would further the purpose of the organization and promote its code of ethics and guidelines for practice.

Fellowship status was awarded to applicants who the organization believed had "contributed to the profession and who [were] respected for their sustained high-quality professional skills and ethical behavior". A member of the organization was qualified to apply if they had been a Professional Associate for at least two years and had accumulated at least 10 years of full-time experience after training. They also were required to submit 3-5 examples of their work, be able to document that they had been active in research and scholarship, and were required to show that they had contributed to the field through elective office, lectures to community groups, service to boards and commissions, education or mentoring, or professional consulting. Applicants were also required to be sponsored by five members who were already Fellows and knew the applicant's work. A 500-700 word essay was also required which described the significance of Fellowship status.

The organization supported a paid staff of six. Eight members served on the board of directors, and members participated in 10 specialty groups, 15 committees, and 2 task forces. One board member supervised the work of the committees and task forces, and another guided the work of the specialty groups. Most of the specialty groups were organized according to the particular interests and expertise of members regarding types of materials. These included specialty groups for paintings, books and paper, photographic materials, textiles, electronic media, and wooden objects. However, groups representing a broader scope included architecture, conservators in private practice, research and technical studies, and objects. Notably, the specialty groups with a broader scope were formed most recently.

Members interested in archaeological conservation were relegated to a discussion group operating within the parameters of a larger group of objects conservators. Approximately 30 members belonged to the discussion group, and two co-chairs
coordinated activities. The discussion group was not mentioned on the public web site, and its annual meeting was regularly held during the annual conferences of the parent organization at 7:00 a.m. Although the discussion group has its own email discussion list and any member could join, access to it was through the larger group of objects conservators, and this circumstance limited the visibility of discussion about archaeological topics to other members of the organization.

Notwithstanding its low visibility in the organization’s promotional material, the discussion group was fairly active and organized its own sessions at annual conferences, local tours at annual venues, and on occasion, its own conferences. Many members were also involved in professional archaeological organizations.

Data for my research were collected during a tour to a relatively new archaeological conservation lab approximately 95 kilometres from the conference venue. The lab was located within a rural park on about 200 hectares of land donated to the state. The park was formerly a family farm, and some of the remaining buildings in the park are remnants of the farming complex. The property incorporated ongoing archaeological excavations of the remains of historic structures, some of which were originally discovered in the 1930s. A free slave house once existed on a knoll behind the conservation lab, and the conservators noted that the site had recently been excavated with help from one of the home owner’s descendants. Slave quarters were known to have existed nearby.

At the time of my visit, the conservation lab had been in operation for five years. The lab formed the centre piece of an archaeological centre, which served as a “clearinghouse” for archaeological material recovered by state and federal agencies. It was also the repository for private collections donated to the state Historical Trust and provided office and workspace for archaeologists as well as a research library.

A public archaeology program run by the centre provided volunteers with the opportunity to help excavate, wash, sort, label, count, and catalogue some of the artefacts
recovered during park projects. Volunteers also sometimes assisted with conservation tasks, and during the summer, an eight-week class in archaeological conservation and collection management was offered through a local college.

The conservators stated that they often came into contact with the archaeologists; in fact, the lead conservator’s office was adjacent to the finds processing area. However, on the day of our visit, archaeologists were not present and excavations nearby were not in progress. Although the conservators occasionally worked on other archaeological projects, they believed that the consulting fees to do so were rarely incorporated into the budget of an archaeological project.

The tour was given by two conservators -- a lead conservator and his supervisor, the chief conservator. The lead conservator was a graduate of a conservation program located outside of the US. He also had an MA in archaeology and had worked on several archaeological sites as a conservator. The chief conservator was an older woman, who implied through various comments that she had gained her knowledge through practical experience over the course of many years and had worked on many different kinds of projects. It was clear from repeated statements that the chief conservator had been heavily involved in the conservation lab’s design.

Throughout the tour several themes were repeated, suggesting that they were significant to the institution and the conservators. These themes involved access, safety, environmental conditions, and finances.

The chief conservator often stressed that the centre was open and accessible to the public, and she provided us with views of a small area used for classes, as well as a library with Internet access. She pointed out that a web site for the centre included a database of catalogued artefacts, and as text on the web site notes, “access to the collections is one of the lab’s most important goals”. The chief conservator also highlighted the fact that some of the workspace had been designed with windows so that the activities of the staff could be observed by visitors. This focus on access suggested a
potential tension between the public and the centre, perhaps because it is operated on state property and therefore is subsidized by public funds.

Both conservators noted that different spaces within the labs where used for different purposes and the fact that the environment of some rooms was considered “dirty” and others “clean”. That is, some tasks were undertaken in the “dirty” rooms where exposure of the objects to dust or pests was not problematic. The dirty room was the largest, and it was further divided into areas for specific purposes. For instance, the conservators explained that “cleaning to observe” was done in one area, while “cleaning to stabilize” was accomplished in another.

Stabilized materials were taken to a “finishing lab” where some material analysis was undertaken, but the conservators stated that they had “little time to spare for this”. A question from the tour group about a dugout canoe in the lab prompted the comment that it was excavated by the archaeologists in an emergency and “that’s when a lot of damage occurred”. The conservator also noted that the discovery generated much excitement when it was first found, but few have shown it much attention since then.

Throughout the tour the conservators stressed the importance of volunteers, not only for their help and enthusiasm for completing projects (“they’re willing to do anything”), but also for the importance of their knowledge. As an example of the latter, the lead conservator mentioned a volunteer who had been a blacksmith and was able to identify an object that the conservator not. “He knew exactly what it was, but it was just a twisted piece of metal to me”.

Another reoccurring theme involved environmental issues and safety involving the conservators, the public at large, and the objects. Both conservators highlighted the fact that they recycled ethanol, used environmentally friendly materials, and used a “safe room” when working with flammable chemicals. This emphasis on the use of “safe” materials suggested that another source of tension may involve concerns of the public, and perhaps other staff members, that they could be exposed to toxic materials.
Environmental controls were also a topic of discussion, particularly chillers and HVAC systems. The common-place failure of chillers was discussed, as was the fact that conversations with HVAC engineers can be frustrating. The conservators believed that the engineers assumed their clients were not knowledgeable about environmental controls. They also believed that the engineers assumed that the task was to design systems benefiting people rather than objects. As the chief conservator stated, "they don't realize that we don't care for our personal comfort as much as artefacts".

The subject of finances was another common thread, as the conservators discussed the fact that contract work and fees for storage were other sources of revenue for the centre. Later, budget cuts were cited as the main reason that office and lab space existed for a material scientist and scanning electron microscope, but neither had materialized.

Other discussion involved the types of objects which the centre was obligated to accept and care for regardless of their perceived value to the conservators. As examples, the conservators pointed to a modern, unremarkable basket in need of repair, and described the arrival of a large steam engine brought to them in two pieces. The fact that the conservators often confronted the uncertainty of new priorities was reflected in the comment, "you never know what you're going to have tomorrow".

Both conservators appeared to take particular pride in designing unique solutions to problems, citing collaboration with an engineer to design a custom-built freeze dryer, and work with a local blacksmith to design a stand for a large wooden object from a sunken ship.

Some discussion concerned working in the field. The lead conservator noted that he tried not to go "too far out there" using elaborate or novel treatments, and instead used materials that were familiar to others, so if necessary, his methods could more easily be reversed. The chief conservator commented that "they use you for everything", implying that she could be asked to undertake tasks that were not typical for a conservator and which did not require conservation skills.
When asked if there were many calls from archaeologists in the field for their help, the lead conservator suggested that they would probably get more calls but “they think we don’t want to be disturbed”. He added that when he received these calls he stressed that time could be saved for both the archaeologist and conservator if, instead of delivering objects to the lab, the archaeologist asked the conservator to come into the field.

The tour ended in the main storage area, where the lead conservator discussed the fact that the area was not open to the public or even all of the staff. The storage area tour prompted the chief conservator to comment on the privileged nature of some objects over others. She also noted the tension created when objects were stored before they could be assessed, and the potential for one object to impact the environmental conditions of all of the objects in storage. Her narrative also revealed her personal connection to the repository as she recounted the arrival of one object stating, “that’s not going in my storage…it was just a mess…”.

During a less formal conversation at the end of the tour, the lead conservator described experiences working with archaeologists on various other projects. In one narrative, he described an interaction with a numismatist who stated that he would never let a conservator touch his material for fear it would get ruined. The conservator also described another encounter where the archaeologist held a piece of glass and slowly rubbed off the patina with his thumb. As he did so the archaeologist stated that colour was all that was important, and this couldn’t be seen through the “crust”. The conservator claimed that this gesture was done to antagonize him. In another narrative he spoke of his decision to pursue a degree in conservation after completing an MA in archaeology. He recalled that one of his fellow graduate students in archaeology appeared stunned by his decision and asked why he would be interested in such “ephemera”.

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9.4 The Archaeological Conservation Conference

In 2005, I gathered data from a conference dedicated solely to the topic of archaeological conservation. This meeting was held on the East Coast of the US near the grounds of a historic park that is operated by a private, not-for-profit educational foundation. The park was created in 1926 by a wealthy American philanthropist in order to preserve the remaining structures of a town founded in 1699. The town had served as important commercial and political centre in the years preceding the American Revolution. The park included 85% of the town’s original area and 80 of its original structures. Several buildings had been reconstructed, and other facilities had been added to the grounds and the surrounding area in order to support tourism and for-profit enterprises such as hotels, restaurants, and golf courses.

Several conservators and archaeologists were on staff at the park, and archaeological excavation has been ongoing for more than 60 years. Modern excavations on park grounds were considered “exhibit digs”, and the public was encouraged to interact with the excavators and ask questions. The archaeology department was responsible for the care of the artefacts recovered through excavation, and tours of the archaeological lab were offered one day a week. Park archaeologists also led a summer field school in association with a local college and collaborated on other archaeological projects with various organizations including the National Park Service.

Considering the park’s focus on the built environment, it is perhaps not surprising that the work of the architectural conservators was quite visible on the park’s web site. The fact that architectural conservation is highlighted on the web site and that standards for building examination, treatment, and project management are made public, may suggest that the park has been criticized for its approaches to historic preservation in the past, and that it is publicizing a shift in strategy. In fact, the web site noted that the aims of the park once focused on recreating and commemorating the past, but preserving a structure’s original fabric and researching the mechanisms of decay were also important.
The park’s archaeological conservator was separated administratively from the architectural conservators and the conservators of paintings, textiles, and decorative arts by the fact that she worked within the archaeology department. She was trained in archaeological conservation in the UK, and it was she who was primarily responsible for organizing the conference. Although she had worked on other types of archaeological sites in other countries, most of her work was now with objects from historic sites -- that is, sites dating to the period after European contact. This was commonly the case for archaeological conservators working on the East Coast of the US.

The idea for an archaeological conservation conference grew from discussions among members of the national conservation organization about the need to bridge conservation and archaeological practice. Opinions varied on approaches, with some favouring the involvement of archaeologists in conference planning as well as participation. Ultimately, however, the conference addressed current issues in archaeological conservation relating to on-site documentation and stabilization, technical studies, archives and repositories, and community involvement. Planning for the conference took several years, and much of the work to organize the conference rested on the shoulders of one or two conservators. Archaeologists were invited to present papers.

Of nearly 100 people in attendance, most were from the US; however, other attendees were from the UK, Canada, Greece, Norway, Iceland, and Sweden. Many of the participants were known to me as conservators, but the number of archaeologists in attendance was difficult for me to determine.

The conference sessions were held within a complex adjacent to the park, which included a library, a storage room for non-archaeological material, conservation labs, and office buildings. Papers were presented in a small auditorium of a building that originally served as a school and community centre for African Americans before desegregation. In recognition of the building’s significance, a permanent exhibition on African American education was housed in a room near the lobby. The fact that the park’s web site

Unlike at other conferences from which I collected data, there were no concurrent sessions. A reception was held on the evening of the first day of meetings, but other than the tour of the conservation labs, there were no other formal extra-curricular events. However, many participants attended an impromptu gathering at a popular local pub on the evening before the last day of presentations.

The conference continued over a period of four days, with each day divided into sessions moderated by a keynote speaker. The moderator was responsible for introducing other session speakers and leading discussion at the end of the session. Most moderators asked the audience to withhold questions until the session’s end at which time all session speakers were recalled to the front of the room. The objective of this protocol was to stimulate discussion between the archaeologists and conservators.

Of the forty-three papers, eight were presented by archaeologists, although archaeologists also co-authored several others. At least two of the archaeologists made their professional affiliation clear by announcing, “I am not a conservator”. Of particular interest was a presentation by an archaeologist who brought along his basic “tool box” of conservation supplies. He displayed these supplies on a table while discussing his common-sense approach to conservation. At one point in his presentation he commented that conservation was not “rocket science”, a statement which was not challenged by anyone in the audience. Later in the session, a conservation scientist presented a paper describing her use of the same advanced technology for the analysis of metals that was
used by physicists in her university. Reaction to her paper from one member of the audience seemed to imply that conservation shouldn’t be “rocket science”. That is, on most occasions, such technology was not available, and even if it were, its use might be impractical.

During session breaks, as well as lunch and dinner gatherings, interaction between the conservators and the archaeologists appeared to be minimal. Most of the archaeologists presented their papers during the same afternoon session, and it was unclear how many of them stayed on for other sessions. The conference organizers planned to publish the conference papers, with the expectation that a publication would have a broader impact on the archaeological profession.

9.5 Summary and Conclusions

In this chapter, I presented the contexts for some of the verbal texts I used for my research. In this instance, the verbal texts I collected represented formal and semiformal environments for the presentation of professional practice. Each of these contexts presented examples of boundaries between professional identities. For instance, archaeologists at the international archaeology conference expected the conservators’ resolution to focus on the needs of the indigenous communities rather than those of the conservation or archaeological community since this was the context within which the organization operated. In another instance, conservators at an archaeological conference expected archaeologists to find details regarding treatments and analysis of materials relevant, since this was an acceptable format for the presentation of information to conservators.

This chapter, and the three preceding it, described the contexts for verbal texts from informal, semiformal, and formal settings where the practice of archaeologists and conservators was presented. In the next chapter, I will describe the contexts of written
texts, where we will see ways in which each community of practice distinguishes itself from others through literary practice.
In addition to participant observation, my research included the analysis of 121 articles from four English language journals which were published in the US and the UK in 2004. I chose to analyze articles from these journals because the participants spoke in English and most of the participants I observed received their training in these countries.

I selected *Studies in Conservation* (*Studies*) and the *Journal of the American Institute of Conservation* (*JAIC*) to represent the conservation literature, and *Antiquity* and *American Antiquity* to represent the archaeological literature. The *JAIC* and *American Antiquity* are published in the US, and *Studies* and *Antiquity* are published in the UK. Each journal is peer-reviewed and considered influential within its respective discipline.

According to scholars, the evolution of scientific journals is closely tied with the “growth in volume of scientific research and with the rise of professionalisation” (Meadows 1974, 85). In the following sections I will discuss how the development of archaeology and conservation as professions can be traced through each of these journals. I will also present evidence for ways in which the archaeological and conservation communities have used these journals to help distinguish themselves from the lay public and from other disciplines.

### 10.1 Antiquity

Of the four journals, *Antiquity* is the only publication in my study that is not affiliated with a dues paying, voting, membership organization. Instead, it is produced by Antiquity Publications Ltd., which is owned by the Antiquity Trust, a registered charity. However, members of the archaeological community form the board of trustees, and the journal currently operates out of offices located within the University of York’s Archaeology Department. Although the publication is not formally affiliated with a

"Generally speaking, the history of Antiquity is the history of 20th century archaeology. Leafing through the issues, you can still hear the hopes and the concerns, the clashes and the put-downs, the boos and the cheers, as in a congressional record. And really, the mark of a good journal is precisely the ability to move with the evolution of the discourse, wherever it may happen to go or drift. Antiquity had been the preferred medium for many really significant exchanges of ideas (Terrenato 2002, 1105).

*Antiquity* has been a venue for the exchange of these ideas longer than any of the journals of my study, having been created as a private venture by O.G.S. Crawford in 1927. Crawford’s original concept for the journal grew from a reaction to existing British journals on archaeology, which he considered to be narrowly focused and parochial (Chippendale 2002, 1076). In fact, at the time *Antiquity* was launched, 16 archaeological journals were in publication at the time, each with a focus on a specific time period or geographic area (Renfrew 2002, 1067).

Another goal was to provide a source for “credible” information. As Crawford states in his first editorial:

"We shall keep our readers informed about important discoveries made and books published; and we shall warn them of mare’s nests. Many so-called discoveries are nothing but newspaper "stunts"; many best-sellers are written by quacks. The public is humbugged, but it is nobody’s business to expose the fraud. Such books are ignored by the learned world. Reviewers in literary papers are therefore tolerant, if not favourable, for they hear no word of dissent; there is a demand for stuff like this, and the case goes by default. Every page may contain gross errors and wild guesses which pass unchallenged. The antidote is to create a sound and informed body of opinion, and to make it articulate (Crawford 1927, 1).

Editorials have always been one of the journal’s hallmarks, and *Antiquity* is well known for the frank and personal editorial style established by Crawford and continued by subsequent editors. Editorial policy has been overseen by a board drawn from the archaeological community since the 1960s. However, “it is a journal that is entrusted to
its editor, constrained by no society or committee; thus editors and contributors are permitted to speak their mind" (Malone and Stoddart 2002, 1065). Throughout the first 60 years of its history, the journal's editorship changed hands only three times. Crawford served as editor from 1927 until his death in 1957, followed by Glyn Daniel, who edited Antiquity from 1958 until his death in 1986. From 1987 until 1997, Christopher Chippendale took on editorial responsibilities, and since 1997, much shorter terms of editorship have been the rule.

The interests of the editors may have shaped its format and content (Rosenswig 2005). Crawford, for instance, was known to have expertise and a great deal of interest in aerial photography, and this topic was well represented during his tenure. Other common topics in the early years included field survey and site distribution studies which could also be attributed to Crawford's, and later, Daniels' background in geography. Nevertheless, these topics also reflected trends in archaeological practice. For instance, according to Renfrew, a focus on geography indicated that British archaeology was "still imprisoned by the rigorous requirements of chronology" and dependant on "prior assumptions about contacts between cultures and...diffusionist principles" (Renfrew 2002, 1071).

Nevertheless, Antiquity has been viewed as "the first archaeological journal with a world-wide scope" (Renfrew 2002, 1068) although, until 1986, geographical "coverage was principally, but not exclusively, focused on Great Britain" (Stoddart 2002, 1119). Some scholars suggest that this was due to difficulties in finding authors with expertise in other areas during the journal’s earliest years (DeMarrais 2002). For instance, in 1930, Crawford introduced an article on Mayan archaeology stating that "We had long been trying to obtain an article on this subject, but hitherto without success" (DeMarrais 2002, 1089 citing Crawford 1930, 369).
However, in later years, lack of a broader coverage may have reflected a view that some geographical areas lay beyond the interests of the journal’s readers (ibid.). Special sections dedicated to specific geographic areas serve as indicators that the editors were aware of gaps in coverage. Issues published in 1988, 1989, and 1990, for instance, contained special sections on archaeological research in Central America, Japan, and Eastern Europe.

Crawford’s original aims were for the journal to “serve as a link between specialists and the general public” (Malone 2002, 1072 citing Crawford 1955, 193) and present “the most interesting things that are going on in the archaeological world, and also to foreshadow coming events of outstanding importance” (Malone 2002, 1072 citing Crawford 1957, 57). His goal to link professionals with non-professionals was illustrated by the fact that the journal’s first issue contained an article written by amateur R.C.C. Clay (Cunliffe, 2002), and that Clay continued to be an active contributor to many issues thereafter. Hawkes described Crawford’s attempts to find a balance between audiences:

He has been determined that he would never produce a 'picture book for the brainless', he has published a characteristically vigorous attack on those who speak of mere popularizations for he sees that the accumulation of detailed knowledge with its esoteric jargon can hardly be justified unless what is truly significant for the understanding of human history is led into the main stream of our culture. His skill in steering between over-simplification and over-specialization has enabled the Magazine to succeed admirably in its role as go-between for experts and public (Hawkes 1951, 172).

However in recent years, the targeted audience is less the interested public than the practicing archaeologists. As Fagan remarks:

Let us now abandon the fiction that today’s ANTIQUITY is aimed at both serious amateurs and professionals. There will always be some gifted, deeply committed avocationals, who will always subscribe, but our real audience is now the larger archaeological community ourselves... (Fagan 2002, 1124).

Fagan goes on to note that even if the journal is aimed toward practicing archaeologists, the increased specialization of the field makes scope difficult to define.
The changing archaeological community was acknowledged in 1987 by editor Chippendale as he reaffirmed Crawford’s mandate for the journal’s scope to remain broad. In his first editorial Chippendale states that:

ANTIQUITY will remain a place of primary publication, whilst emphatically a general journal. This is more than one editor’s domestic problem, as it reflects two contradictory processes which affect all working archaeologists. Firstly archaeology is balkanizing, as period, regional and technical fields divide into smaller units. Some areas of the subject, early-man studies at one end and post-medieval at the other, have become worlds of their own. Some, like ‘industrial archaeology’, were never clearly part of the field.

At the same time, the range of places and contexts where relevant information may lie is broadening. Thirty years ago one could be a specialist in the archaeology of, say, Malta in the context of the Mediterranean; now one needs also to be aware of the wider character of island societies and cultures, whether in the Mediterranean at 5000 BC or in the Pacific at AD 1000. When it comes to particular methods and techniques — dendrochronology, inference from surface survey, palaeopathology of skeletal remains — relevant comparative materials can be very distant in time, space, and cultural context. And fundamental issues — to do with saving what survives of the past, and the relations of archaeology to the wider world — affect us all (Chippendale 1987, 5).

However, according to Terrenato’s (2002) analysis, another split within archaeology occurred much earlier and played out within the pages of Antiquity. For the first 50 years of the journal, approximately one of six of the texts involved discussion of classical archaeology, but beyond this point, only one in twenty of the articles covered this topic. Terrenato summarizes the divide:

Classical archaeology went, almost overnight, from the status of founding member and elder statesman of the discipline to that of a small contingent struggling to bring up the rear, bogged down with culture-historical norms and obsessed with irrelevant detail. It is as if Classicists had woken up one day to find that everybody else had upped and gone during the night, down a path that they were neither planning nor prepared to follow. To this day, they are still reeling from the shock.

This is probably the key event in the intellectual history of classical archaeology in the 20th century and ANTIQUITY again bears illuminating witness of the phenomenon (Terrenato 2002, 1107).
The event to which Terrenato alludes is the introduction of new theoretical approaches known as “New Archaeology”, or “processualism”, which were embraced (and criticized by some) within the pages of *Antiquity*. A particular signpost was David Clarke’s landmark article, “Archaeology: the loss of innocence” (Clarke 1973).

Later, *Antiquity* also signalled a trend away from these concepts through coverage of various “post-processualist” approaches. According to Darvill (2002, 1098), “Ian Hodder’s ‘Archaeology in 1984,’ published in March of that year, marked the turning point in many people’s eyes and certainly introduced many of the key ideas”.

The growing importance of Archaeological Resource Management can also be traced through *Antiquity*. According to Darvill, the impact of a specific report viewing “salvage archaeology” as a non-renewable resource (Cleere and Fowler 1976) “can be seen in the way that field archaeology developed in Britain throughout the following decade” (Darvill 2002, 1099).

*Antiquity*’s format remained fairly constant during the tenure of the first two editors, containing editorials, articles, news and notes, and book reviews and occasional sections for comments, correspondence, or “aria”. Several changes were implemented shortly after the introduction of a new editor in 1987. For instance, special sections dedicated to specific topics began to appear, suggesting that these were topics that had not received significant coverage in the journal before. One special section in the 1988 volume addressed topics from the New World, and another issue from the same volume related to classical archaeology.

Perhaps the most significant change of format was the introduction of electronic publishing, which allowed changes in the way data could be presented. For instance illustrations, which were always an important component of the journal for instance, could be integrated with texts rather than included as separate plates (Chippendale 1987).
In the past several years, the publisher has provided more of the journal’s current content on the Internet, which now includes a “photo gallery” providing an opportunity for projects to generate interest through a single photograph representing their activities. The web site also provides a forum for discussion and includes links to publishers of books and journals reviewed.

Instructions to potential authors were not included in the publication until 1988, suggesting either that manuscripts were solicited or that the submission of manuscripts did not require particular encouragement. It is also possible that requirements were simple enough to be negotiated on an ad hoc basis, and that paid staff handled any necessary changes. Instructions to authors currently appear on the web site and are simple and clearly presented.

Perhaps in keeping with the more commercial nature of the publication, a prominent portion of the instructions include details relating to copyright, which is assigned to Antiquity Publications Ltd. According to the editors, one advantage of this process is that it provides a better way to “watch for infringement” and ensure that use by third parties is handled “efficiently and consistently”. Of course, the process also allows the journal to publish its content on the Internet and charge fees for access as well as for full text copies of the articles.

10.2 American Antiquity

American Antiquity has been published by the Society for American Archaeology (SAA) since 1935. In keeping with the founding principles of the SAA, the journal’s original intent was to share knowledge between professionals and avocational enthusiasts (McKern 1940). In fact, the first article published in American Antiquity was written by P.F. Titterington, an amateur archaeologist who also funded the journal’s first issue (Sabloff 1985). Apart from financial support, this resolve for inclusion was to foster
cooperation and displace mistrust. Five years after the journal’s first appearance, editor McKern discussed some of these issues and also highlighted the benefits of collaboration:

There had developed an unfortunate amount of suspicion and bad feeling between the professional group and various non-professional elements, particularly that group interested in making private collections of archaeological materials. This feeling of mistrust, often intolerance, was founded upon a minimum of fact and a maximum of misunderstanding...Students [non-professionals] who have made unfortunate mistakes in the past, due to a failure on the part of more experienced students to offer pertinent information and friendly cooperation, are making fewer mistakes as the result of sincere efforts to place at their disposal the purposes and procedure of improved methods. Professionals who formerly struggled along alone, attempting with the aid of but two eyes to obtain a comprehension of widely scattered phenomena requiring the keen observation of many eyes in many places, are now enjoying a much broader knowledge of their chosen fields as a result of the assistance or inspiration of non-professionals (McKern 1940, 2).

Regardless, the voice of amateurs receded. After the first few issues, the editor announced that in order to encourage contributions from avocational enthusiasts, the “correspondence” section would become a place for them to publish updates on their work. However, this area was soon overtaken by “professionals and other specialists” (McKern 1938) using a language of their own. Some members believed that because of the “very technical ‘archaeological language’” used by authors, “one might almost think that the object of this ‘language’ is to confuse the reader...[and] conceal facts” (Byers 1941, 97). As the editor elaborates:

MUMBO JUMBO has always been a means by which the priests of secret cults have sought to mystify and impress their followers. If the initiates can build up a language of secret words of which only they know the meaning, then they are bound together and at once set apart from lesser men by their secret mysteries.

One can hardly blame the casual reader in search of information if he seems to feel that archaeologists are forming a secret society, with a special jargon known only to its initiates...(ibid.).

Regardless of the editor’s disapproval, the trend continued. By 1978, some members believed that the journal had become “unreadable, that it had become a journal of jargon and mathematics” (Hole 1978, 151), a reflection of theoretical approaches which borrowed and adapted language from other disciplines. Seven years later, another
editor lamented that “many of these problems with archaeological prose and its obscurity to many amateur readers are still with us” (Sabloff 1985, 234).

However, in the 1990s the divisive nature of archaeological language was acknowledged with particular concern for its impact on specific communities. For example, one editorial noted that care must be taken when using the word “remains” since the Apache equate this word with human burials, whether or not this is the archaeologist’s meaning (Reid 1991a). Another editorial noted that using words such as “myths” and “stories” rather than “oral histories” had the potential to devalue the cultural heritage of other communities (Reid 1992).

In tandem with increased pressures to “publish or perish” and institution of the peer review process, fewer and fewer non-professionals submitted articles and had them accepted. By 2000, only 4% of the submissions and 1% of the articles accepted for publication were by specialists from other fields, avocational archaeologists, or others (Goldstein et al. 2000, 4). To address this issue, some editors discussed creating a separate publication that would better serve the avocational membership, but concerns of cost outweighed any perceived benefit. It was not until the advent of desk-top publishing in the 1990s that these ideas became a reality with the creation of another more informal publication, the SAA Bulletin.

Originally, the Bulletin functioned as the society newsletter and provided information on upcoming conferences, training opportunities, and society activities. In 1995, obituaries and reports of the society’s annual business meetings were moved to the Bulletin from American Antiquity (Graves 1995, 6).

The Bulletin was superseded by the Archaeological Record in 2001. In contrast to American Antiquity, the Record was able to include more color photographs because of lower production costs, and perhaps as a result, appeal to a wider readership. In addition, the Record presented shorter articles about archaeological projects, as well as essays.
concerning the profession and its practice. Many of these topics included issues related to Cultural Resource Management (CRM).

Acknowledgement of CRM as a growing and accepted subfield of the profession is signaled in a 1978 issue of *American Antiquity* with a separate section for "one or two articles per issue that relate specific examples of cultural resource management to general problems facing the field" (Sabloff, 1978, 551). Three years later, CRM articles and reports began to appear in regular sections of the journal "in recognition of the integration of 'public archaeology' into the mainstream of Americanist practice" (Dincauze 1981, 467).

Nevertheless, some journal readers viewed CRM as a threat to the professionalism of the discipline. A guest editorial on "Changing Values in Archaeology" presents some of these concerns:

I can foresee a time when archaeology may come to be regarded, even by archaeologists, as nothing more than a service industry, when archaeologists regard themselves as the peers of beauticians and plumbers, who have no obligation whatsoever beyond the simple repair jobs they are called in to do. They may fulfill a contract in the very strictest sense, but will go on from there to the next contract rather than to the assimilation and synthesis of the data, which is what cultural preservation is all about. They will feel no responsibility to disseminate to the world at large such knowledge as is gained and no regret for the loss of knowledge which might have been gained (Wendorf 1979, 642).

For others, another harm posed by the development CRM involved lack of access to the results of archaeological work which threatened "to deprive the profession of knowledge it needs to carry out research efficiently and develop its understanding of past cultures and their growth" (Sabloff 1979a, 211). In response to these concerns, the editor announced that he was "willing to publish those reports on contract research that can place the results in a theoretical, methodological, or culture historical context of interest and relevance to the general readership of the journal" (ibid., 212).
An editorial in 1991 noted the divide in its readership, and hinted that work in CRM is not scholarly, and therefore it is less valuable. According to the editor, one-third of the SAA's members occupied the "academic-scholarly realm of the discipline" while "Much of the membership and potential readership of American Antiquity concerns itself on a day-to-day basis with cultural resources as commodities to be managed" (Reid 1991b, 579). The editor announced that the journal would accommodate this divide through "the increased involvement of nonacademic archaeologists and their publications in the reviews section". He also noted that the book review editors were making a particular effort to lift "the gray literature out of obscurity" thereby "extending scholarly interaction to professional archaeologists throughout the private and government sectors" (Reid 1991b, 579).

Notably, the editors of the books and review section at this time were CRM professionals, who in their commentary suggest that differences in the perceived status of this literature existed. "CRM reports issued by federal, state, and local government offices, and the same type of reports that leave the many private firms [are] as legitimate as the books we already review that are produced by the large commercial and university presses" (Gelburd and Dent 1991, 5).

The influence of anthropology on the discipline of archaeology in the US is not only shown through the theoretical approaches undertaken by the journal's authors, but also through the journal's publication process. According to American Antiquity's first editor, W.C. McKern, the journal's format was based on the American Anthropological Association's (AAA) journal as well as its UK precursor, Antiquity (McKern 1936). McKern was a member of the AAA, as were many of the SAA's founders, and he was also the curator of anthropology for the Milwaukee Public Museum. The SAA contracted with the AAA to provide administrative support for the management of American Antiquity from 1970 to 1984, until tax regulations terminated the relationship (Dincauze
1984, 3). Offers of joint memberships in AAA and SAA were also seen as a way to boost membership (Woodbury 1969, 506).

Regardless of these connections, tensions between archaeologists and anthropologists in the US have always existed. In comments about the history of this relationship, editor J. J. Reid noted that:

Archaeologists no longer need be self-conscious in gatherings of anthropologists, where once they were figuratively branded with the scarlet letter A for antiquarian — “fact-grubbing antiquarian” to Clyde Kluckhohn. As we near the end of the twentieth century most American archaeologists have made a reasonable accommodation with their anthropological colleagues (Reid 1991, 195).

Complete independence from the AAA occurred in 1993 when separate offices with an executive director, staff, and budget for the SAA were established. To some, this symbolized “American archaeology’s intellectual maturity” (Reid 1993, 199), and it was almost immediately reflected in the management and production of the journal. For example, editors were no longer elected, but instead were appointed by the SAA Executive Board on recommendation by the Publications Committee. This process was viewed with reservations by some who were concerned that editors, who were appointed rather than elected, would be less independent and “intellectually diverse” (ibid.).

The journal soon demonstrated its independence by changing its cover and typeface, and adding the SAA’s logo (Figure 10.2.1). Artwork for the cover was chosen to represent “some aspect of archaeological material from the New World” with each quarterly issue using a different illustration “indicating the nature of our discipline”. For instance, the first new cover used a design from Southwestern ceramics which the editors considered to be “the basis for archaeological research in the area”. They continued their rationale for the art by stating that:

Ceramic design styles reflect both analytical and theoretical dimensions of Americanist archaeology and are tied to substantive interpretations of prehistory. Symbolically, ceramic style, like archaeology itself, reflects the production of a commodity, the interactions between individuals, and the exchange of information... analyses of style have a long history in the discipline of archaeology and were among the first topics taken up by
Americanist archaeologists in the Southwest and elsewhere in the New World (Graves 1995, 5).

**Figure 10.2.1** American Antiquity's first new cover after SAA's break with AAA

Until this time, the journal's format had remained relatively constant, largely following the format of its namesake. Originally, sections existed for correspondence, "scientific articles", book reviews, notes and news, and lists of recent publications. Occasionally, editorials and obituaries also appeared.

The first format change appeared in 1945 with more text printed to the page in an effort to conserve paper. The announcement of this fact was made with apologies to readers who might perceive a thinner journal as less impressive (Byers 1941). However, the journal's mass was not an issue by 1959. By this time SAA had gained enough strength and confidence to raise the dues of its membership, which editors claimed as a reason that the issues were "much larger than usual".

Increased funds and new binding methods meant that longer articles could be published and abstracts could be added. The inclusion of abstracts was considered a particularly significant way to keep up-to-date with the literature, and they were also reprinted in an annual volume entitled *New World Archaeology*. In acknowledgement of the increasing interest and growth of the membership in Latin America, authors were required to submit abstracts in English and Spanish in 1989 (Wood 1989, 233). By 1992
abstracts were considered important enough for the editors to publish specific guidelines (Reid and Majewski 1992, 4).

Another substantial change in format occurred in 1948, when a spartan, new cover was introduced. A ruler appeared along the margins of the cover verso which invoked attention to systematic approaches in the field and the lab and also reflected evolving standards for measurement (Figure 10.2.2).

The 1948 volume also ushered in the first appearance of a short, half-page section in the back of the journal with “information for authors”. Instructions included a statement of the journal’s scope, a requirement for papers to be dated, typewritten and double spaced on one side only of a “standard-sized” paper. The only specific formatting instructions related to citations and how to handle illustrations.

Guidelines for authors remained simple until 1962, when they grew to incorporate two pages of specifics regarding scope, style, preparation of manuscripts, what should be included in abstracts, notes and acknowledgements, and detailed instructions for references and illustrations. Four years later, more detailed instructions were given regarding illustrations and tables, as were standards for citing radiocarbon dates.
In 1970, instructions were moved to the front of the journal and reduced to a single paragraph, with specifics relating only to radiocarbon dates. However, a major expansion of the guidelines occurred in 1979, when the editor added 16 pages of a “Style Guide for American Antiquity” in the back of the journal (Sabloff 1979). Instructions included the manner in which the manuscript should be typed, sections to include, the appearance of the title page, and appropriate headings. Specific attention was given to metric measurements, mathematical and statistical equations, tables and illustrations, and references.

Instructions in subsequent volumes referred authors to the 1979 issue until 1983, when the style guide was transformed into a document entitled “Editorial Policy and Style Guide for American Antiquity”. Of particular interest in this document is the added statement that:

It is the policy of American Antiquity to comply with the intent of the 1973 American Anthropological Association motion on gender in language. This motion discourages the employment of male third-person pronouns and the use of generic "man" in reference to non-sex-specific semantic categories. More comprehensive terms (e.g., "one", "person", "people", "humans", "they") are to be employed, in grammatically correct constructions, as a matter of equity (Dincauze 1983, 429).

Also of note is that the section on appropriate formats for references specifically addresses “contracted and proprietary reports”.

The executive committee approved the addition of advertisements in 1969, although the decision was not unanimous with some objections on aesthetic grounds. The rationale for this change was not only to increase revenue, but that since many of the ads were for new equipment and books, “several members consider much of the advertising in other journals to be a useful way of keeping up with developments in the instrumentation and publishing fields” (Culbert 1969, 503).

In 1970, SAA contracted the services of the American Anthropological Association (AAA) business office to help with production of the journal, and the journal’s external and internal appearance reflected this change. The journal’s title used a more stylized
font, and its placement on the cover would later accommodate illustrations. It is perhaps no coincidence that, as with the *Journal of the American Anthropological Association*, a statement directly under the journal title announced that the publication was associated with a professional organization (Figure 10.2.3).

![American Antiquity and American Anthropologist covers](image)

**Figure 10.2.3** A comparison of *American Antiquity* (left) and *American Anthropologist* (right) covers in 1971. Both covers include a statement linking the publication to a professional organization.

In response to the growing scope of archaeological inquiry, a peer-review process was initiated (Reid 1990, 665). Two readers reviewed manuscripts until 1990, when the number of readers was increased to a minimum of four in order to “provide authors and the editor with a greater range of advice and comment as well as to speed up the manuscript review process “in response to growth of the field” (Reid 1990, 665).

One of the last format changes was to move society business meeting information, announcements of awards, and obituaries from *American Antiquity*, to the *SAA Bulletin*. Editors stated that the rationale for this decision was practical, since this would create more space “for works devoted to the scholarly purpose of the journal” (Graves 1995, 6). Since the *Bulletin* was published more frequently, information could also be distributed in a more timely fashion. The decision regarding obituaries may have been contentious,
since it was mentioned again two years later. The editor noted that without obituaries,
there would be more room for occasional articles on archaeologists

emphasizing their specific and significant intellectual contributions to
the discipline rather than the process of their lives. This new category of
article represents a theoretical or contextual place of a person in the
development of the history of archaeology (Goldstein 1997, 395).

Special issues appeared on at least two occasions, and since articles were solicited
rather than submitted, topics addressed were those that the editors considered to be of
particular importance to the field. The first special issue was in 1978 and focused on
future directions of method and theory. According to the editor, the issue represented the
culmination of criticism that the journal had “failed to give due accord to the work that
New Archaeologists are performing on the frontiers of the field” (Hole 1978, 151).

Approximately twenty years later, another special issue on the growing theoretical
debate was published. In this instance, the editors invited two groups of authors, each
from difference sides of an issue, to submit separate manuscripts. Articles were
exchanged for comment, and opposing arguments were presented in the same issue. The
editor noted that the approach was similar to one used in Current Anthropology
(Goldstein 1997a, 179).

Another special issue appeared in 1985 to acknowledge American Antiquity’s 50th
anniversary. Along with content representing “an array of founding figures”, it also
included “a few participant observers from other lands or disciplines who offer their
cosmopolitan perspectives on our doings” (Watson 1985, 227). The event was also
marked with historic photos “of familiar and not-so-familiar personages, each of whom
played a significant role in Americanist archaeology” (ibid.).

Although American Antiquity began as “a small publication with relatively limited
interests” (Sabloff 1985, 228), the geographic scope of the journal has proceeded in
cycles. From the 1930s to the 1950s, the journal expanded its scope outside of the
Americas, and from the 1950s to the 1980s, it focused largely on the archaeology of
North and South America (Eerkens 2003). However in 1983, the SAA made it clear that the journal would also publish on topics related to “archaeological theory, method, and practice worldwide” (SAA 1983, 429). By 1990, the number of articles addressing the archaeology of Latin America had grown to the extent that a separate journal, *Latin American Antiquity*, began publication.

10.3 *Studies in Conservation*

*Studies in Conservation* is published by the International Institute for Conservation of Historic and Artistic Works (IIC), based in London. Although the journal was first published in 1952, it had strong ties to a precursor published from 1932 to 1942, *Technical Studies in the Field of the Fine Arts*, which was published for Harvard’s Fogg Museum in the US.

According to *Technical Studies*’ managing editor, “A fair proportion of its content dealt with problems in the care and repair of objects of all kinds” (Stout 1964, 126). However, the journal focused on technical issues and specifically excluded broader, historical topics and architectural subjects. This was made explicit in the editor’s description of the journal’s purpose as

the publication of articles, notes, book reviews, and abstracts from current periodicals which may be concerned with the materials and methods of design, construction and conservation of works of art. *This aim is not extended to studies of a purely historical kind which touch on authorship and origin, unless some technical phase of such studies is to be considered, and is not extended to the field of architecture [my emphasis].* Original research in the history of materials and methods, expositions of theory, and records of experiment or practice that have promise of general application will be welcome and will be respectfully considered (Brommelle 1977, 199 citing Stout 1975).

*Technical Studies* did not have a wide circulation, and it ceased publication during World War II. However, after the war, the journal’s managing editor, George Stout, and associate editor, John Gettens, became two of the founding members of the IIC.
IIC was officially founded under British Charter in 1950 in response to a need to address issues of preservation made clear by the storage of museum collections during the war (Stout 1964). Two years later, *Studies in Conservation* began publication through the efforts of another founding IIC member, Ian Rawlins. Editor Rawlins acknowledged the new journal’s role and ties to its precursor in his first editorial:

To begin with, it is well to recollect how much the whole outlook has been conditioned by the experience gained with *Technical Studies in the Field of Fine Arts*, publication of which unfortunately ceased in 1942. Since then, conservators have been bereft of any medium of communication of a strictly comparable type; and it is this gap which the new journal may help to fill (Rawlins 1952, [i]).

Rawlins was Technical Director of the Cathedrals Committee and the Council for Care of Churches, and later became technical advisor to the British Museum, and was considered “a leader in the study and practice of laboratory methods for the care of paintings” (Plenderleith 1964, 123). Regardless of this technical and analytical background, he recognized the need to represent the interests of all members of IIC; those in the “workshops” or “studios” as well as those in the “lab”:

Little need be said now about the division of contributions into 'theoretical' and 'practical' categories. Equilibrium will probably be attained more naturally by constant watch and ward than by any pre-conceived planning. Whereas nothing less than the best — and that implies the most meticulous — in the way of scholarship will suffice, there is every reason why studio and laboratory processes should receive equal prominence. Knowledge advances by the mastery of technique, as a great scientist was fond of reminding us (Rawlins 1952, [i]).

The challenge of achieving this balance continued, a reflection perhaps of the tensions within the profession between those performing the research and those wishing to apply the results of this research to practical needs. As a curator commented several years later:

One museum art historian would like to pay his tribute to Ian Rawlins for his sympathy for museum problems and for his understanding of the curator’s anxieties. There was a time, not long ago, when such understanding was not too frequently found among scientists” (Van Schendel 1964, 123).
A balance in journal coverage was not only needed between analytical research and practical applications, but also in the coverage of topics of interest to various conservation specialties. Ten years after Technical Studies ceased, its influence could still be seen through a predominance of topics related to the "fine arts". Approximately two-thirds of the articles in the first two volumes of Studies in Conservation addressed issues relevant to the conservation of drawings and paintings (Brommelle 1977, 199). Rawlins acknowledged this fact in the last issue of the first volume, by stating that, "The contents of this number belie to some extent our tradition of balance as regards subject...It is frankly weighted in the direction of pictures and their components" (Rawlins 1954a, [i]).

Early editorials indicate that the effort to bridge science and the arts was considered one of the hallmarks of the profession. Commenting on the content of the first few issues, Rawlins stated that:

The common thread...is the continuous impact of an increasing knowledge of materials upon our grasp of art-history...[and] of the way in which the evolution of method in the workshop has influenced our grip of the artist's purpose, and thus of the need for a wider concept of the place of conservation in the world today (Rawlins 1954a, [i]).

By 1959, these connecting fields were also expanding into areas of specialization, each with its own language and therefore the potential to inhibit the exchange of information. As editor Garry Thomson commented:

Those who want their information precise and exact — scientists as much as any other group — have become resigned to scanning much that is outside their comprehension. Through necessity they have had to learn to extract only those facts which bear on their immediate problems, and to throw much else aside. This sad state of affairs is beginning to affect the study and practice of conservation.

The purpose of this Journal is to present discoveries, advances, new techniques, and materials to the conservator as precisely and accurately as possible. Thus there can be no concession to popularisation if this involves loss of information. But fortunately there are many ways of making an article more comprehensible without loss of information. It is important, for instance, to use the simplest possible words and to avoid confused sentences...

It would be quite foolish to suppose that everything can be made understandable to everybody. But if some trouble is taken over these points, specialists in different branches of conservation will be able to exchange information in this Journal with the least possible difficulty (Thomson 1959, iii).
Other editorials suggest that a topic of concern not only involved ways to incorporate topics on science and the arts as well as different areas of specialization, but also conservation as it was practiced in various parts of the world:

As an organ of communication between members of I.I.C., Conservation is basically international, and will allow no national, political, or racial prejudice to stand in the way of its free coverage. Any past issue will illustrate this point. The present one is satisfactorily representative, with articles from Japan, UK, Norway, U.S.A. and Germany (Thomson 1959, iii).

Since its beginning, Studies has always accepted articles for publication in languages other than English. However, the specific language in which articles could be published, and the languages in which manuscripts could be submitted varied throughout time. From 1952 until 1967, articles were published in either English or French, and the journal’s title and instructions to contributors also appeared in both languages. Editor Rawlins explained this policy:

Since the Editorial Advisory Committee is centered in London, English is the language we have decided to use for all editorial purposes; but the articles themselves will be printed either in English with summary in French, or vice versa (Rawlins 1952 [ii]).

When editorial responsibilities moved to the Netherlands in 1968, the bilingual cover and front matter no longer appeared. Nevertheless, instructions to authors stated that manuscripts could be submitted in more languages than before, a reflection no doubt of the language skills of associate editors. Manuscripts could be submitted in German, Italian, Spanish, and Dutch. However, those accepted for publication would be translated by the publishers into English or French.

In 1974, guidelines stated that articles could also be published in German, but by 1977, editors stated that “German speaking authors who want a preliminary assessment of a contribution in their language should submit it to the Editorial Adviser in Vienna” (Mills 1977, 48). Papers could still be submitted in Italian, but not Dutch or Spanish. By 1982, manuscripts could only be submitted English or French.
In the mid 1960s, the journal began accepting advertisements, which also provide insights into the development of the profession as well as the context of employment in general at the time. Advertisements recruiting employees requested applicants with technical expertise and/or a diploma in conservation as well as the appropriate gender (Figure 10.3.1) and age (Figure 10.3.2). Materials and equipment used in treatments were advertised, including those used in preventive approaches to conservation (Figure 10.3.3 and 10.3.4).

**Rome Centre—Scientific Assistant**

**Required**: Scientific Assistant (male). Chemist/physicist with good degree and wide scientific and technical interests to be focused and applied in advising on methods of preserving objects of art, antiques etc. and monuments throughout the world. Working languages French and English. Candidates should have command of one and at least an understanding of the other. Salary range $6,000-$8,000 depending on experience and qualifications, free income tax (Italy) plus cost of living and transportation allowances. Minimal contract 2 years. Applications with Curriculum Vitae to Director, Rome Centre, by 1 September 1965.

**National Museum of Antiquities of Scotland, Edinburgh**

**Conservation Specialist**

The Museum, which will be transferred to a new building in Edinburgh in 1976, houses collections of objects used in Scotland from the stone age to modern times and is concerned with their social and technological, as well as aesthetic, significance. The successful candidate will be engaged in the conservation of existing museum collections and of newly excavated material from various parts of Scotland, and will also conduct research into conservation methods. Candidates, normally aged at least 26, must have a science qualification at least ONC, BSC H year or equivalent, together with a high degree of technical skill and relevant experience. They should normally hold the Museums Association Conservation Certificate or Diploma in Conservation of the London Institute of Archaeology and a SCE, or equivalent, pass in English or English Language.

**SALARY (under review)**: Senior Conservation Officer starting around £2700 and rising to £3600, Conservation Officer £2100-£2900, starting salary may be above minimum according to age, qualifications and experience. Non-contributory pension scheme.

For full details and an application form (to be returned by 24 April 1976) write to Civil Service Commission, Aldershot, Hampshire, RG21 1JB or telephone Basingstoke 29222 ext 300 (or, for 24 hour answering service, LONDON 01-639 1992). Please quote G/8954.

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**Figure 10.3.1** Advertisement with a gender requirement (Source: Studies in Conservation 10, 1965)

**Figure 10.3.2** Advertisement with an age requirement (Source: Studies in Conservation 20, 1975)

**Figure 10.3.3** Advertisement for UV measuring equipment (Source: Studies in Conservation 21, 1976)

**Figure 10.3.4** Advertisement for glass film coating (Source: Studies in Conservation 27, 1982)
The intent of *Studies* was to “present discoveries, advances, new techniques” and to serve as “an organ of communication between members of I.I.C.” (Thompson 1959, iii). During the early years, this communication also included significant personal events such as the granting of awards or the death of members. By the 1960s, the number of members and events of interest had grown to the extent that a “hand-duplicated newssheet” called *IIC News* began distribution. In 1970, editors announced that “It has now become apparent that a journal published at six-monthly intervals cannot provide an adequate news service for our members” (Smith 1970, 162), and as an experiment, *IIC News* would be distributed with *Studies in Conservation*.

By 1970, the content of *IIC News* included IIC meeting notes, upcoming conference agendas, information about past and future courses, seminars, and conferences around the world, and publications for conservation. It also included lists of new IIC Fellows, Associate Members, and Institutional Supporters as well as personal news including marriages, births, and changes in employment.

The experiment with *IIC News* lasted for two volumes. In 1972 it returned to its independent status and began publishing quarterly, and in 1976, it merged with IIC’s *Appointments Vacant Bulletin* to form the *IIC Bulletin* published six times a year.

By the 1970s, the profession had grown to the extent that IIC memberships in regional groups could be supported, including one for the Americas and another for the UK. The UK group was large enough to split into several branches: one for London, another for Scotland, and another Northern Branch. In 1971, *IIC News* announced a meeting to discuss the formation of a regional group in Mexico, predicated by the fact that 25 of IIC’s Associates and 5 supporting institutions represented this region.
Topics of potential interest to archaeologists had been covered in *Studies* since its earliest issues. In fact, an Egyptian bronze was featured on the cover of the second issue of volume two in 1955. However, as the cover also displays in its title, the focus of the journal, as well as IIC, appeared to involve museum objects (Figure 10.3.5).

*Figure 10.3.5 Archaeological object featured on Studies in Conservation cover in 1955 (Source: Studies in Conservation 2(2) 1955)*

In 1958, IIC's name changed to incorporate "historic and artistic works" in order to reflect the increasingly broad range of expertise within the field of conservation. As one editor noted:

A great many specialist fields are involved. Restorers themselves must specialize. In order that highly technical developments may be initiated, there must be scientists who have some insight into the problems of conservation. And there are those from other disciplines, particularly archaeologists and anthropologists, who are often required to make urgent use, in the field, of their knowledge of practical conservation. In addition to all these, the editor feels that the techniques revealed in the pages of this journal cannot fail to interest all who, in their appreciation of cultures past and present, rely on a firm basis of facts (Thomson 1959, iii).
Evidence for this broadening scope is shown in a 1959 issue cover that highlighted conservation at the archaeological site of Angor Wat (Figure 10.3.6).

Figure 10.3.6 Site of Angor Wat featured on Studies in Conservation cover in 1959 (Source: Studies in Conservation 4(2) 1959)

A few years later, a cover included a photograph of an archaeological excavation trench, the first and only Studies cover to do so (Figure 10.3.7). The photo refers to an article on the treatment of a casket from a Buddhist stuppa, which was “regarded by authorities...as of the greatest importance” (Hegde 1964, 70).

Figure 10.3.7 Archaeological trench featured on Studies in Conservation cover in 1964 (Source: Studies in Conservation 9(2) 1964)
In a summary of the article, the editor notes that the author presents "a difficult problem of conservation — whether to leave antiquities in their original surroundings, which have in this case great religious significance, or whether to gather them into the safety of a controlled environment" (Thomson 1964, iii). In the same issue, another short piece in the "Field, Laboratory and Studio" section presents an interesting technique for documenting soil profiles by transferring and storing soil adhering to a latex coating (Shorer 1964).

In 1973, a special issue of *Studies* was published on the conservation of Borobudur Temple in Indonesia. As the editor notes, "Studies in Conservation rarely contains articles on the restoration of specific historic monuments because various specialized journals in individual countries adequately cover such activities" (Van Asperen de Boer 1973, 101). That this special publication was produced indicates that the profession saw a need to emphasize the involvement of conservators as collaborative experts on such projects. The editor's comments acknowledge this explicitly by stating:

The reasons for emphasizing monument preservation in this special issue [do not primarily involve]...the outstanding importance of Borobudur for the world's artistic patrimony...It would seem that the most interesting aspect for conservation specialists is the approach used to tackle the Borobudur project. From the very beginning the complexity of the problems involved has been recognized, resulting in a very close multidisciplinary collaboration to arrive at plans for the conservation of Borobudur...It could be argued that the problems are naturally more complex in large size monuments.

However quite probably in a great number of cases it is hardly realized that there are many interdependent problems to be investigated before an optimum approach can be formulated for the conservation of a particular object. The more 'primitive' attitude, although often inevitable, may not only lead to the use of insufficient treatment of only temporary value but may also involve the implementation of wrong methods and procedures to be regretted by later generations. Conscientious and systematic preliminary study of the object to be restored has been advocated long ago. Too often, however, this moral obligation has been neglected or discarded...It is hoped that the articles...may contribute to make those responsible for the conservation of cultural property aware of the necessity of collaboration of specialists from many different fields in order to arrive at the best solutions (Van Asperen de Boer 1973, 101).
Three years later, editorial responsibilities shifted briefly to Dr. Nigel Seeley at the Institute of Archaeology, London, who commented on other changes to *Studies*, and by implication, to changes in the field of conservation as well:

The field covered embraces the whole of the material remains relating to the arts, archaeology, and ethnography, including standing monuments, library and archival materials, and what may be termed the industrial arts.

The approach is extremely varied, treating of course the conservation techniques and materials themselves, but also the technology and composition of the different types of object, the nature of the deteriorative processes and their prevention, and the several aspects of storage and display.

This provides an opportunity for the publication of papers on a number of topics of interest to members of IIC which have as yet found little or no space in *Studies in Conservation*, and which would be greatly welcomed (Seeley 1976, [i]).

Seeley also noted that the issue contained an article on “two Aboriginal rock painted sites in Australia, a topic which has so far received very little attention” (ibid.).

Later that year, another editor stated that “The conservation of groups of ethnographica in various natural materials has received attention in earlier issues but the treatment of basketry is now described for the first time in these pages” (Mills 1976, [i]).

Changes to the profession at this time are also reflected in changes to the journal’s format. Until the late 1960s, the format had remained relatively uniform, including editorials, articles, notes, book reviews, and occasional letters to the editor. A section for “shorter contributions appeared in the 1970s, but it was dropped shortly thereafter in acknowledgement of the fact that “a short paper is not necessarily any less important than a long one, and it is difficult to draw a firm demarcation between the two” (Seeley 1976, [i]). This statement suggests that a tension still existed between those with “hands-on” experience, who were briefly reporting observations or describing new techniques, and researchers who were presenting detailed analyses. In 1978, the editor makes clear that submissions on technique are, with certain caveats, acceptable:

Articles on conservational methods and actual case histories, providing they show some advances or have elements of novelty, are not only acceptable but
wanted, but they will of course be as carefully scrutinized by referees as are articles of a scientific nature (Mills 1978, [i]).

Sixteen years later, the issue was raised again as editors noted that “the achievement of high academic standing for Studies has had an unfortunate side-effect — fewer papers on conservation treatments are being submitted (Moncrieff et al. 1994, 1).

A substantial change in format occurred in 1982 when publishing by letterpress shifted to lithographic printing, and new binding and distribution methods were also put in place. Some characteristics of the journal’s new appearance suggest a trend away from aesthetics toward efficiency. A different typeface was introduced to provide “greater clarity and more economic use of the available space,” and cover photographs were replaced with the table of contents. According to the editors, placing a list of the journal’s content on its cover permitted “rapid location of a particular article and liberates additional space for the articles themselves” (Bomford et al. 1982, [i]).

Guidelines for potential authors became increasingly more detailed. For the first sixteen years of publication, instructions to authors were eight lines long, stating where and how to send manuscripts. Authors were requested to submit duplicate copies written in French or English, and divide the manuscript into sections and subsections using previous issues as a model. Editors sometimes alluded to ideal general qualities of a submission. For instance, one editor noted that papers in a current issue were examples of the kind of article which Studies in Conservation hopes to attract. Both authors have taken the trouble to assemble all the necessary facts, then to expound them in an ordered manner using simple words without loss of precision. Difficulties and uncertainties are frankly described (Thomson 1963, iii).

In 1968, instructions for contributors grew to eight paragraphs which specifically detailed what the manuscript should contain and how it should be presented. Authors were asked to include an abstract no more than 200 words long as well as references, lists of figures and drawings, and a curriculum vitae. Specifics were also given for appropriate ways to display different types of illustrations.
That there were now a number of places for conservation topics to be published is illustrated through the fact that instructions included the statement that:

Submission of a contribution is understood to imply that no paper containing the same information has been previously published in the open literature except in the form of a preliminary report and that the manuscript is not under editorial consideration or in the process of publication elsewhere (Van Asperen de Boer 1968, [i]).

By 1978, the proliferation of publication venues had become a potential detriment according to one editor who commented that:

Preparation of this issue of Studies in Conservation was slowed down by a shortage of material to fill it...Part of these difficulties must be attributed to the increase in the number of outlets for articles in the field of conservation, both published conference proceedings and also several new journals (Mills 1978, [i]).

The increased volume of conservation literature is also evident from guidelines to authors stating that references will no longer be included as “notes”, and that authors will be expected to follow a specific format for listing them (Mills 1977, 48).

In 1977, instructions became “Guidelines to Authors”. Although placed in the back of the issue, the guidelines became more explicit by adding specific requirements for the format of notes and references, and suggested that information on “materials or apparatus” should be included. Standard scientific notation was not stressed, although the guidelines noted the use of the metric system (Mills 1977). However, by 1989, requirements stated that “SI units should be used for all numerical data, and IUPAC (International Union of Pure & Applied Chemistry) nomenclature, where appropriate, for identifying chemical compounds” (Bomford et al.1989, [i]).

From 1978 to 1981, guidelines appeared sporadically suggesting that the editors were less concerned with the numbers of submissions they received, or that they were seeking specific types of submissions. In 1978, guidelines were published in French in one issue only, and in 1979 they appeared in English in one issue and French in another. From 1980 to 1981, instructions to authors were not published at all, suggesting that the editors did not wish to encourage submissions. An editorial in 1981 supports this
assumption by stating that “At the moment the flow of manuscripts which merit 
publication just about matches the space available” (Bomford et al. 1981, [i]). The 
increased number of submissions from a “widening range and technical 
complexity…from authors not writing in their native tongue” (Mills and Oddy 1980) is 
also reflected in the fact that a second editor was added in 1980, a third was added in 
1981, and five were listed 1993.

From the 1980s to the present, the placement and availability of guidelines to 
authors continued to shift, implying a fluctuation in the number of “quality” submissions 
the editors anticipated. That is, if enough acceptable manuscripts were received, there was 
less need to encourage submissions by making instructions for submissions more 
accessible. From 1982 to 1990, instructions returned to a simplified form containing 
general statements about content and format, and were once again placed with other front 
matter. In 1991 and 1992, guidelines were moved to the back, and appeared in only one 
issue per year.

However, in 1993 guidelines returned to the front matter and they were expanded 
and emphasized with a larger font. New, detailed requirements signaled a concern for 
more submissions of a specific type. The specifications stressed, at length, the appropriate 
use of chemical nomenclature as well as the fact that “internationally approved methods 
and descriptors will be expected for other properties” (Moncrieff et al. 1993, 2). This 
effort to promote submissions of a specific type may have been a success, since from 
1995 to 2000 the editors did not see a need to make instructions readily available. Authors 
were instructed to request this information by writing to the editors.

From 2001 to the present, author guidelines have been available to those with 
Internet access. Guidelines are currently six pages long and require that submissions be 
made electronically via an email attachment or CD sent through regular mail.
These trends in changes to the guidelines indicate that the journal has become increasingly concerned with standards for content, particularly standards of relevance to the “hard” sciences. These trends also indicate that the editors expect the journal to be relevant to and read by professionals outside of the conservation community. A “scientific”, academic approach is therefore seen as synonymous with quality, which the editors argue places the journal in a “position of respect when judged for funding and support against competing humanities and science activities” (Moncrieff et al. 1994, 1).

The journal may in fact have a reputation for publishing a majority of articles with an analytical or scientific content, since editors have repeatedly made comments to the contrary. The current journal summary appearing on JSTOR, an online archive for the publication, states that the journal publishes “original work on a range of subjects…Scientific content is not necessary, and the editors encourage the submission of practical articles to help maintain the traditional balance of the journal”.

Projecting a balance in scope has always been a challenge for such a diverse field. In 1977, an editor commented that:

The aim of the journal is to publish articles of lasting value on the conservation and restoration of objects of art and history as well as technological and analytical studies of them, of the whole range of materials of which they are made, and of the materials used in their treatment. This very wide range of topics at times inevitably penetrates into relatively esoteric areas of the physical sciences, and those whose principal concern is practical conservation may sometimes feel that such matters are too remote from their own interests and needs.

Yet is their complaint really of too much science and too little conservation? Is a restorer of paintings, say, likely to be less interested in studies of the chemistry of painting materials than in conservation methods for stone and metals? We must perhaps accept that not all the articles published will be read with interest by all the readers but it remains an aim that each article should be understandable by any reader who is sufficiently interested to give it careful study.

What then of the balance of the subjects covered? Perhaps at a later date it will be possible to give a breakdown of papers submitted, accepted and rejected but we will only say here that the contents of the journal are largely determined by what is available for publication. Policy may play a part but the contributors themselves play a much larger one (Mills 1977, [i]).
Challenges for the field have also been expressed in the journal through debate. The forum for this exchange was originally the “Letters to the Editor” section, and occurrences were relatively rare until the late 1970s. In one letter, the author states that an earlier paper “abounds in factual, chronological and historical inaccuracies” (Cameron 1978, 127). In the same issue, another letter replies that:

As is evident from the authors’ biographical information contained in the relevant paper, the work presented there has been carried out exclusively by physicists. Naturally the conclusions reached there are physicists’ opinions about archaeological subjects and may very well be an 'amateur's point of view'. What is a fact, is that the work presents the results of a scientific investigation [author’s emphasis] of ancient pigments with a variety of physical methods. It thus carries some basic information [author’s emphasis] which may or may not lead to one or more conclusions (Filippakis 1978, 129).

Three years later, editors announced that “With this issue, Studies in Conservation becomes a vehicle for academic debate” (Bomford et al. 1981). Use of the term “academic” implied that debate would be undertaken in a formal manner, through peer-reviewed, full-length articles and reference to supporting literature.

Nevertheless, critiques and commentary continued to appear in the Letters to the Editor section. One of the longest debates continued through several issues and concerned an article on the effects of soaps and gels on paint films. The discussion suggested a disjunction between research, available published literature, and the practical experience of conservators. One author who was critical of the article stated that “I applaud the editorial drive towards the inclusion of more practical conservation treatments...Might we not extend this same drive toward presenting research that is more directly related to actual conservation treatments as well? (Wolbers 1994, 285). Another author noted that:

Applied scientific research of this kind is the essential foundation which enables conservators to make informed judgments on the benefits and limitations of new methods. I feel, however, that...important contextual references which would allow the conservator to assess properly the significance of the result are...missing (Phenix 1995, 207).
And yet another author claimed that the paper contained “scientific errors, and methodological errors which reflect a lack of understanding of the cleaning techniques” (Stavroudis 1995, 208).

The authors of the article under scrutiny replied that “If [the author] has data or information relating to these and other questions... we strongly encourage him to publish them. An open discussion in the refereed literature would help greatly clarify the issues...” (Erhardt and Bischoff 1994, 286). Later one author commented again that “If we are uninformed about the techniques, it is due not to lack of effort but to the astonishing lack of published material” (Erhardt 1995, 211). The paper’s co-author also stated that “Though we are criticized for not following literature protocols, nowhere in the Notes does one see references to established literature procedures for such cleaning protocols” (Bischoff 1995, 212).

10.4 Journal of the American Institute for Conservation

The Journal of the American Institute for Conservation (JAIC) can attribute its beginnings to the influences of the IIC, the same organization that produces Studies in Conservation. Soon after the founding of IIC in 1950, various regional and national “branch organizations” began to form. One of the earliest was the IIC-American Group (IIC-AG) established in 1958. According to one its founding members, the size of the profession in America at that time was so small that “all of the conservators in New York could fit around [a] dining room table” (Sack 2007). By 1960, the group had grown to over 100 members, and an additional “device for interchange of ideas” (Buck 1960, [i]) was required – the IIC-AG Bulletin.

The Bulletin was not only a vehicle for reporting events, news and notes, it also served to bridge differences in roles and status among museum professionals. According to Buck (1960, [i]) more than one-third of the IIC-AG membership was unable to attend annual meetings due to scheduling conflicts with meetings of the American Association
of Museums (AAM) Technical Group, or meetings of the Association of Museum Directors. Therefore, another function of the *Bulletin* was to maintain an exchange of knowledge among members who had different institutional roles. The goal was to place “administrators and directors of museums who assume the major responsibility for the care of their collections...on an equal footing with the technically trained personnel” (ibid.).

IIC board members were initially concerned that the *Bulletin* would duplicate efforts, and noted that “a general bulletin — IIC NEWS — existed for precisely the type of material which the AG Bulletin was expected to contain” (Keck and Feller 1960, 4). However, the board also acknowledged that the American Group could only meet once a year, making “the need felt for additional bonds between Group members”. A compromise was found by agreeing that material of interest to all IIC members would be sent to IIC NEWS as an “American Letter”. To make allegiance to the parent organization clear perhaps, the IIC logo appeared predominately in the masthead of the *Bulletin’s* first page, and the group continued to help build the IIC’s membership base. By 1965, nearly one quarter of the IIC membership was affiliated with IIC-AG (Feller 1965, 1).

Annual meetings were considered the main method of communication for the membership, and the earliest issues of the *Bulletin* reflect this through the fact that information on past and upcoming meetings dominates content. However, early issues also announced lecture series, courses, meetings of interest, and news of members’ activities. Occasionally, the *Bulletin* also contained short articles on specific topics such as standards for oil paints (Feller 1960) or workplace liabilities in the lab (Block 1961, Quandt 1961). Beginning with the *Bulletin’s* second issue, a regular feature included activities of the first US conservation graduate program at the Conservation Center, Institute of Fine Arts, New York University.
Because many members attended the American Association of Museums (AAM) and American Museum Directors annual meetings, the IIC-AG originally held their meetings in tandem with these groups. As a consequence, the location of the meetings expanded beyond the East Coast, and the work of the IIC became more widely known in the US.

While membership grew within the US, contact with peers in other countries remained essential, and a particular need was to keep abreast of new literature in the field. In recognition that most of this literature was appearing outside of the US, a special publications committee was assigned the task of translating and disseminating important articles (Feller 1962). This effort to maintain strong intercontinental bonds was undertaken from both sides of the Atlantic, and occasionally moved beyond strictly professional matters. In 1964 for instance, the editors of the *Bulletin* published a letter from the Chairman of the IIC-UK expressing sympathy for the death of President Kennedy.

The first extended discussion of archaeological conservation appeared as a short piece in 1962, and announced that North Carolina’s Department of Archives and History had founded a preservation laboratory to treat artefacts recovered from a merchant ship sunk during the American Civil War (Wandrus 1962). News items in other early issues also described the activities of members who were working as conservators at archaeological projects in Egypt, Greece, and Turkey (Feller 1964, 5-6).

Significant events in the archaeological community were clearly of interest to the membership. For instance, the *Bulletin* was quick to announce the inaugural issues of the University of Pennsylvania’s Museum Applied Science Center for Archaeology (*MASCA)* Newsletter (Feller 1966, 22), and the *British Archaeological Abstracts* (Feller 1967, 26). The beginnings of groups such as the Committee for Nautical Archaeology within the Museums Association (Great Britain) were also publicized (Feller 1967). News of archaeological courses, symposia, and seminars also often appeared in early issues as well.
as updates on collaborative projects. One such project of note involved the Working Group for the Physical Sciences in Art and Archaeology at Washington University in St. Louis, Missouri, which involved physical scientists, archaeologists, art historians, curators, and anthropologists (Keck 1974a, 64-66).

Other information of significance to the field included knowledge of the characteristics of specific materials used in conservation, particularly the growing list of synthetic materials. The need for this information was so great that in 1959 an ICOM Sub-Committee was formed to collect it. Information was particularly scarce in America. As Keck and Feller note, “Outside of the subjects of picture varnishes and UV-absorbers, there is little record in America of the materials that are available and useful” (Keck and Feller 1960, 4).

By the mid 1960s, the IIC-AG was already beginning to acknowledge its history. Short obituaries had already been published, but in 1964 a substantial piece on the history of conservation appeared (Keck 1964). Notwithstanding the recognition of this history, members still felt the need to seek support for legitimacy. For example, in 1963 the editor reported that, according to an official document of the American Association of Museums, “conservation and preservation of objects was considered to be a key attribute in the definition of a museum” (Feller 1963). Shortly thereafter, IIC’s Committee on Professional Relations for Conservators completed a document on standards of practice otherwise known as the Murray Pease Report (Thomson 1964a).

The 1967 volume of the Bulletin marked the beginnings of a more professional publication, and also signaled changes in the development of the discipline in the Americas. New details suggested a more formal publication and included a cover page, a table of contents, information on where members could send contributions, and verso pages with the names of the editor, editorial board, and officers of the IIC-AG. The IIC logo was noticeably absent on the first 1967 issue, but by the second issue it reappeared.
The contents of the *Bulletin* in 1967 also suggest that the field was becoming more formally defined as a discipline. An announcement in the first issue stated that a "Code of Ethics for Art Conservators" had been approved which would take the IIC-AG "one more small step toward professionalization of the vocation of art conservation" (Keck 1967, 3). According to Keck, the purpose of the code was not only to guide conservators, but also to help others judge professional conduct, since it was "quite possible that if litigation occurs involving ethical conduct, a court of law would be guided by precepts expressed in the Code in arriving at a verdict" (ibid.). The same issue of the *Bulletin* included an announcement that the IIC-AG was about to undertake a salary survey. Another news item announced the formation of the ICOM Committee on Conservation — a merger of the Committee for the Treatment of Paintings with the Committee for Museum Laboratories.

The following year, plans were announced for the 1968 annual meeting of IIC-AG at the Los Angeles County Museum of Art — the first meeting of the group to be held in the western region of the US. The Los Angeles museum had recently opened a conservation lab, but rather than a recognition of a growing group of professionals in this region of the US, the location most likely reflected the fact that the American Association of Museums was meeting in San Francisco. Approximately 100 people attended the Los Angeles meeting (Feller 1969, 3).

A letter reproduced in the *Bulletin* from the General Counsel of the Smithsonian Institution the same year shows that by this time the organization was seen as a voice of professional expertise. The letter cites an effort to amend the Historic Preservation Act of 1966 to provide funds for membership in the Rome Centre (ICCROM) and notes that "IIC-AG will be an important factor in securing its approval by the Congress and the President" (Figure 10.4.1).
SMITHSONIAN INSTITUTION
Washington, D. C. 20560
U. S. A.

February 2, 1968

Mr. Louis Pomerantz
Chairman
IIC-AG
c/o The Israel Museum, Jerusalem
Hakirya, Jerusalem
Israel

Dear Mr. Pomerantz:

At Mr. Frank Taylor's suggestion, I am sending you herewith a copy of the legislative package which was sent to the Senate and House last August by S. K. Stevens, Chairman of the Advisory Council on Historic Preservation, and which includes a provision for United States membership in the Rome Centre. The bill was introduced in the Senate as S. 2354 on August 29, 1967, and it is my understanding that it will be introduced in the House this month.

The staff of the Senate Committee on Interior and Insular Affairs, to which the bill was referred, is considering an early hearing on this legislation, but no date has yet been set. Although the Congressional climate is not favorable this year for new starts, however small, particularly in the cases involving the expenditure of dollars abroad, nevertheless we are quite hopeful of early passage of this legislation. We are doing all we can to expedite the bill, and the support of IIC-AG will be an important factor in securing its approval by the Congress and the President.

(signed) Peter G. Power
General Counsel

Enclosures

Figure 10.4.1 Letter to the IIC-AG from the General Counsel, Smithsonian Institution, 1968 (Source: Bowers and Stevens 1968, 12).

In the 1969 issue of the Bulletin, a commentary on training noted the creation of two new “centres of study” in conservation in the coming year: a graduate program at Cooperstown at the State University of New York, and the Intermuseum Laboratory Program at Oberlin, Ohio. Notably, the author warned that, in spite of this, there would be a shortage of well-trained personnel and she recommended against resolving this dilemma with short-term courses (Lefferts 1969, 1). The same issue included a notice from ICOM-CC suggesting that conservators needed guidance with the preparation of analytical reports for museum staff (Figure 10.4.2).
The growth of interest in conservation during the 1970s in America was documented in an *IIC-AG Bulletin* editorial:

In the last month or two I have received a number of letters from young chemists of various degrees of training, up to and including professorship, who say they have heard of conservation and want to know how they can prepare themselves for the work. I have also had letters of inquiry from professors of chemistry and of art who want to engage in the work or to initiate teaching programs. We are witnessing the first signs of the birth of an extensive field of investigation and scholarship that will soon explode in population far in excess of the modest number of the present IIC-American group and the 150 to 180 who attend the annual meeting. Leadership and new vigor is very likely to come from the universities, even more than our museums (Feller 1971, 140).
The publication reflected the growth of the field in many other ways. In 1972, the *IIC-AG Bulletin* became the *Bulletin of the American Institute for Conservation of Historic and Artistic Works* in keeping with a change in the name and status of the organization in 1971. Although the organization was already tax-exempt, the American Group voted to incorporate in order to become qualified for tax-deductible contributions. The federal requirement for receiving this status was for the organization to become independent from the international organization, although an affiliation with the parent group was still allowed. Another benefit of this tax status was that the group was legally defined as a professional organization, a status that gave it the credibility to influence policy. As stated in an editorial:

> The incorporation of the American Group is a first step in forming a truly professional organization for conservators in America. Such an organization will be a stronger force in establishing standards for qualifications and practice in the future as well as for promoting legislation at various levels regarding methods and means for preserving our cultural heritage (Feller 1971a, 1).

While the change was finalized, the process sparked discussion on the meaning of professionalism, education and training, certification, and the purpose of standards (Feller 1971a). In a letter to the editor, Keck stressed that “the important issue is to increase respect for our occupation, to make it an acceptable profession” (Keck 1972, 126).

The name change appeared for the first time on the 1972 volume and marked another step toward a more journal-like format with the addition of a table of contents. In perhaps another effort to validate the status of the organization and the profession, the issue included a note from then President Nixon stressing the importance of preservation (Figure 10.4.3).
The National Council on the Arts has shown imaginative leadership and creative foresight in calling public attention to the critical problems confronting the priceless collections in our nation's museums. I am pleased to join with the Council in urging action by the private and public sectors to safeguard our museum collections. Only by such action can we preserve our treasures for generations to come.

This is an important function of the overall activity of the National Endowment for the Arts; and a major partnership effort between the public and private sector to preserve our cultural heritage should be a priority goal of our national bicentennial celebration.

Figure 10.4.3 Letter from President Nixon on the importance of preservation, 1972 (Source: Feller 1972).

The second issue for this volume included full text “preprints” of conference papers presented at the 1973 annual meeting of the organization in its new transformation as the American Institute for Conservation (AIC). Previously, authors were encouraged to submit conference papers to the editors of Studies in Conservation for consideration, where if accepted, submissions would be peer-reviewed and edited. However, preprints were published in the Bulletin of the AIC without peer-review in the second issue of the next three volumes, while the first issue of the volumes was reserved for news and notes and short pieces on special topics. One such piece was a “trial” glossary of conservation terms developed by George Stout, who believed that until conservation had a well-developed vocabulary of its own it could not “be clarified and plainly marked” as a field of knowledge (Stout 1973, 6).
The same issue contained a posting for two academic positions in a new conservation post-graduate program at Queen’s University in Canada (Figure 10.4.4).

**UNIVERSITY POSITIONS IN CONSERVATION**

QUEEN'S UNIVERSITY AT KINGSTON, CANADA

In September 1974 Queen's University, in cooperation with the Federal Government of Canada will begin a post-graduate programme of education and training in restoration and conservation, leading to a master's degree.

Applications are invited for the following two positions preferably at the Full or Associate Professor level. The positions are available from July 1st, 1974 or as soon as possible thereafter.

1. **PROFESSOR OF ARTIFACTS AND ARCHAEOLOGICAL CONSERVATION**

   Successful applicants will be expected to teach practical and theoretical conservation and be responsible for facility design, curriculum development, budgeting and coordination of their area of the programme.

   Candidates should have good academic qualifications but experience and a sound practical approach to conservation will be regarded as more important attributes.

   Facilities, time and grant opportunities will be available for personal research and an annual travel allowance will be available for attendance at conservation conferences.

   The level of appointment and starting salaries are negotiable and will depend on qualifications and experience. As a guide to expectations the minimum salaries in the 1974-75 session were: Full Professor $20,000, Associate Professor $15,000, Assistant Professor $12,000.

   Applications and enquiries should be addressed to the Conservation Programme, Department of Art History, Queen’s University, Kingston, Ontario, Canada.

**Figure 10.4.4 An early and still rare posting for an American professorship in archaeological conservation (Source: Feller, 1973, 42)**

One of the positions the program hoped to fill was for a Professor of Artifacts and Archaeological Conservation, perhaps the first professorship dedicated specifically to this topic in the Americas. The notice stated that “good academic qualifications” were desired but “experience and a sound practical approach to conservation will be regarded as more important attributes”.

In the next issue, a “conservators needed” item appeared listing five museum conservation positions, four of which were on the East Coast of the US (Feller 1974, 171).

Other announcements in the Bulletin that year included news that a National Conservation Advisory Council had been formed, and AIC was one of 20 member organizations (Gilbert 1974). News of developments abroad also appeared including a
notice that a new postgraduate course in scientific methods in archaeology was offered through the Postgraduate School of Studies in Physics at the University of Bradford (Feller 1973a, 16).

The 1973-1974 volume of the *Bulletin* also contained the preprints of the annual conference held at the location of the new postgraduate program at Cooperstown, New York. Included was one of the earliest papers on American archaeological conservation by Carolyn Rose. The paper proposed a methodology for collaboration with archaeologists, stressing the unique character of each site and the importance of developing an early rapport with the project archaeologist in order to predict as many of the variables one might encounter on site as possible (Rose 1974).

A major change to the publication occurred shortly after the retirement of the *Bulletin's* editor, Robert Feller. During Feller’s fourteen-year tenure, the publication had grown from

> a few news and technical items (28 pages in volume 1, 1960) to [a] technical journal covering national and international news, material and equipment information, techniques of various treatments, case histories and research (288 pages in Volume 14, 1974) (Robertson 1974, [i]).

Changes to the publication show the first real efforts of the group to focus outwardly by encouraging new memberships and the submission of papers. An expanded “Guide for Submitting Material” was included in a separate section of the front matter along with information about categories of membership and a form for requesting a membership application.

Three categories of membership were listed in the *Bulletin*: member, associate, and institutional. Although non-professionals could gain access to the *Bulletin* through the institutional memberships of libraries, museums, businesses, and educational institutions, access to the publication was otherwise closed to those who were not directly involved in the field. As membership instructions state:

> A member must be a professional conservator, conservation-scientist, or an educator in conservation. The AIC Membership Committee suggests that
five years as a practicing conservator above and beyond the training period be considered the length of time appropriate for an applicant to gain the practical experience and develop the judgment necessary for professional standing. An applicant for full professional Membership must have three letters of recommendation from Members of AIC and signatures of two other Members of AIC, all of whom are personally acquainted with his or her work (Keck 1974, 16).

As the publication began its metamorphosis from a news bulletin to a journal, the field of conservation was also beginning to lose some of its influential pioneers. One of the last issues of the Bulletin of the AIC acknowledged this fact through several pages of memorial tributes to John Gettens, past president and founding member of IIC, who was also known for teaching, research, and scholarship spanning a period of over forty-five years.

As interest in conservation continued to expand, a greater focus on training emerged. One of the Bulletin's last issues in 1974 compared five US programs in operation at the time: New York University's Conservation Center, the training program at Harvard's Fogg Museum, the Cooperstown program at the State University at Oneota, New York, the Winterthur Museum program which was affiliated with the University of Delaware, and the Intermuseum Conservation Association program in Oberlin, Ohio. With the exception of the latter, all of the training programs were located on the East Coast. The same issue of the Bulletin drew attention to the fact that the field was also growing on the West Coast with the founding of the Bay Area Art Conservation Guild in San Francisco and the Pacific Regional Conservation Center at the Bishop Museum in Hawaii. The Bulletin also included a list of seven Canadian conservation organizations.

The full transformation of the publication came in 1977 with the introduction of the Journal of the American Institute for Conservation (JAIC). According to the new editor, this change to a standard journal format was made "in order to bring forth a publication that is consistent with the trend toward professionalism in the conservation field" (Sparks 1977, [i]). The journal's scope was to publish "original contributions on
treatment and research in all branches of the theory and practice of the conservation of cultural property, as well as in the related areas of art history and science” (ibid.).

One of the significant differences between the Bulletin and the Journal was the handling of conference preprints. Conference papers had been published in the Bulletin since 1969 as a way of giving information on research results and new methods a wider distribution. However, as preprints, they were not subject to editorial control. With the beginning of the Journal, a review process was initiated involving the editor, an associate editor, and external subject experts. Although the first issue contained conference preprints, the editor made it clear that, unlike in the Bulletin, these papers were “handled as any other with respect to review and revision before being accepted for publication” (ibid.). After the first issue, preprints were handled as separate publications.

Another difference between the two publications was that short news items and organizational business issues were excluded in the Journal, and distributed instead through the AIC News. This separation of scholarly research from the business of the organization took time to complete. Activities of particular significance were still included in the journal up to five years later. For instance, nine pages of an issue in 1978 discussed AIC’s involvement with the Federal Council on the Arts and Humanities’ Working Group on Federal Museums Policy. Included was the content of an AIC presentation to the group that suggests that this was a crucial moment for the expertise of American conservators to be acknowledged:

In response to the rapid growth of concern for the conservation of collections, one of AIC’s main concerns has been the promotion and maintenance of standards...Our emphasis on standards is a product of the extremely rapid growth in the conservation field, which, as welcome as that growth is, creates great potential for irreparable harm to objects through ill-advised treatment (Banks 1978, 49).

More commonly, content of the new journal included technical articles and shorter technical notes. Book reviews, editorials, and letters to the editor also appeared regularly, although not necessarily in each issue.
Although there was no formal section for debate, letters to the editor were used as an “open forum for professional commentary”, which the editor noted, were not refereed or reviewed for technical content (Cohn 1980). In many of these letters, the struggle of the profession to develop its own consistent and meaningful terminology is visible. One of the earliest instances of this effort continued over several issues and addressed the use and misuse of the terms “hot-melt”, “heat-seal”, and “hot-set adhesives” (Burger 1980, Rabin 1979).

Other letters to the editor pointed out errors or omissions in articles in the journal or books published. In one instance, the book *Archeological Chemistry*, by Zvi Goffer, is discussed as an example of the “danger [which] exists...when a book directed toward an audience with responsibilities for the care of antiquities but generally lacking conservation training fails to disclaim the use of general case solutions” (Twilley 1980, 45).

During the 1990s, the letter section often extended through several pages or issues and contained many, sometimes heated, critiques and rebuttals (Cliver 1993, Hoeniger 1992, Kushel 1992, Matero 1993a, Simpson 1992, Stulik and Florsheim 1993, Tumosa 1993, Wolf 1992). However, rather than a formal “debate section”, the editors apparently preferred to mitigate the risks of direct challenges to authors by presenting them as letters to a seemingly impartial and perhaps a less visible editor. In at least one instance, a challenge to an article was also a challenge to the editors themselves regarding the standards of the journal. In comments regarding a published article, a reader asked if particular phrases used by the author would “pass unchallenged in other scientific journals” and added that:

Precise record keeping, radomization techniques for sampling and testing, proper use of controls, blind or double-blind evaluations, appropriate statistical techniques and the use of both replicate and repeat measures in experimental designs are necessary if our field wishes to advance its professionalism and credibility (Wolbers 1993, 95).
This challenge to the *Journal* was met by a response from the editor which emphasized the fact that "it is an omnibus journal with a broad readership [representing] more than one discipline". The editor added that "conservation and science are often combined in one paper...[and] it is often difficult to ensure appropriate review of all facets". As a consequence of this discussion perhaps, the *JAIC* implemented a policy in 1992 whereby papers were assigned to two associate editors: a scientist and a conservator. Through this approach, a scientist could review the scientific component of a paper primarily concerned with conservation, "and equally important, a conservator editor can comment on a scientific paper so that it is put in context for the conservator" (Fitzhugh 1993, 98).

In 1997, the editors recognized the need for a more formal mechanism for mediating discussion. Author guidelines stated that letters to the editor would be peer-reviewed, and that "Only letters that correct errors or omission in a published paper will be accepted. Alternative interpretations of published data or detailed critiques of a published study should be submitted as papers or short contributions" (Reedy 1997, 181). However, soon thereafter, editors dropped any mention of letters to the editor in the guidelines, an indication that there was no longer a need to emphasize this point because it had become standard practice.

The incorporation of advertisements grew steadily. The first issue included a single small ad placed discretely on the last page. By the 1990s, the editors had become more comfortable with the practice. Not only were more ads placed in the back of the issues, but also several full-page ads were regularly included in the front matter of the journal before the table of contents. Perhaps the added revenue from advertisements allowed the journal to introduce a glossy illustrated cover.

The *Journal* began to include author biographies in 1981, which through the listing of credentials, affiliations, and experience, associated content with credibility. In the earliest volumes, these biographies appeared in a position of prominence and were
listed together on a separate page of the front matter. However, editorial comments suggest that the practice of including biographies was the source of some tension, a reflection perhaps of the increased importance placed on formal education. According to some, biographical information was not necessary since papers “should stand on their own merits” (Cohn 1983, [i]). Nevertheless, biographical information for authors soon became one of the requirements for manuscript submission. This information was later placed less prominently at the end of each article, with acknowledgements and lists of suppliers and materials.

Two years after a change of editors in 1989, the Journal’s appearance changed dramatically. It transformed from a plain and relatively non-descript publication to one which suggested an alignment with the arts and humanities (Figure 10.4.5).

![Figure 10.4.5 Comparison of JAIC covers, 1977 (left) and 1990](image)

Placement of the table of contents on the cover followed the lead of Studies. However, this could also have been a publishing trend at the time which, along with double-columned content, was thought to help readers scan content more quickly.
Another significant change was that in 1992, the *JAIC* became a triennial publication. Shortly thereafter, a senior editor was added and the editor became editor-in-chief. Copy editors and a production assistant were later added to the permanent staff, and by 1994, the number of volunteer assistant editors had grown to twelve.

With another issue in publication each year, more space was available to publish papers presented during special sessions at AIC annual conferences or other meetings and symposia. Publication of issues on special themes also became possible, which signaled current issues of importance to the editors, and presumably the membership. But these issues were also an opportunity to expose the members to areas of specialization beyond their own experience and encourage interdisciplinary approaches. In the first special issue on historic wall papers, the editor noted that “While the number of wallpaper conservators is very small, all conservators encounter problems and projects which would be well served by a thorough and interdisciplinary investigation. We hope this special issue will provide a model for such” (Cohn 1981, [i]).

Special issues became more common in the 1990s, and some signaled significant shifts into broader issues of collaboration, particularly “values-based” approaches. One such issue presented a collection of papers given during a session on the conservation of sacred objects. As the session moderator notes:

> We are coming to realize that although we have great mental dexterity in problem-solving, we may not be able to solve all aspects of all problems ourselves. For example, we may be able to function effectively on a building upgrade team in addressing the problems of the interaction between environment and art objects, but that does not make us engineers.

> We are also beginning to understand that there may be times when we could solve a technical problem, but...that ability does not also give us the moral right to do so.

> Our *Code of Ethics* has always exhorted us to know our own limits, and to seek out specialists in other fields; this group of papers suggests there may be other kinds of information which may influence our decision-making, and that we should ask ourselves not only whether we are able to achieve a technically successful treatment, but whether we should (Mibach 1992, [i]).
In another special issue, the editors noted that “the entire field of conservation, including both conservation practice and the research and technical studies conducted to support conservation activities is changing, maturing, and growing” (Hansen and Reedy 1994, 89). This particular issue included papers from a Conservation Research and Technical Studies session at the AIC annual meeting which was organized by the Conservation Science Task Force. This group had been formed to examine the relationships of conservation science to conservation practice, and conduct formal and informal surveys of the membership at large including both conservators and conservation scientists. One of the task force’s conclusions was that “many conservators felt the results of much scientific research recently conducted were not relevant to their practice or rarely coincided with what was observed in the field”. Conservators also stated that topics in need of research were not being addressed, and that they would also like to be informed and involved in ongoing research (ibid.).

A more recent special issue focused on architectural conservation. The fact that this topic did not appear until 2003 reflects the fact that architectural conservation is perceived to be a “somewhat new field”, at least by some within AIC (Reedy 2003, 1).

Author guidelines for special issues noted that “multiple perspectives on a single topic provide breadths and insight that cannot be obtained through a single paper” (ibid.). Guidelines stated that although papers were invited for special issues, unlike invited papers for books or themed volumes, not all of the invited papers for a special issues would be accepted (acceptance was about 50%, similar to that for regular submission).

Guidelines for authors have remained relatively simple throughout the publication’s history. The Bulletin’s first “guidelines for authors” appeared in 1963 and consisted of a solicitation for “news, technical notes, descriptions of new methods and materials, and other matters of interest to colleagues” and a reminder of deadlines twice a year. The first issue of the JAIC included eleven numbered sections specifying editorial policies, types of manuscripts accepted, and the manner in which footnotes, tables,
illustrations, and photographs should be presented. The editor encouraged short communications such as "brief observations on improved treatment or examination procedures" but stated that these "should not be used to report inconclusive or routine results, or small fragments of a large volume of work" and should serve instead as a vehicle for "rapid publication of important information" (Sparks 1977). From 1977 to 1983, instructions were moved between the back and the front of the publication several times, and on occasion, they did not appear at all.

With a change of editors in 1989, instructions for formatting references became more detailed. However it was not until 1991 that guidelines became a permanent feature in the back of the journal and were considered significant enough to be listed in the table of contents. The next change occurred in 2001 and signaled the fact that the editors were receiving manuscripts from an international audience. One new requirement stated that "Papers must be submitted in English. If an author is not fully bilingual, a professional translator should translate the paper into English" (Reedy 2001, 173). Nevertheless, French and Spanish translations of abstracts have appeared since 1996, a reflection of the increasing involvement of conservators from Canada and Latin America. Notably, abstracts began to be translated into Portuguese shortly after the 2002 ICOM-CC triennial meeting in Brazil.

Also of note is that scientific notation in JAIC has never been stressed to the same degree as in style guides for Studies in Conservation, and guidelines for representing data in tables has only recently been added.

10.5 Summary and Conclusions

In this chapter, I have shown how members of the conservation and archaeology communities have presented themselves through their literary practices. As scholars have noted in other disciplines (O'Connor and Meadows 1976), these communities developed
professional identities over time by drawing distinctions between themselves and others through the use of specialized languages and standards for acceptable writing.

Both communities originally depended on the interests of those who were not fully employed or formally trained in the practice of the discipline. But over time, the division between amateur and professional grew through the types of manuscripts that were accepted or recruited for publication and the place within the journal that the submissions appeared. Some submissions were given greater weight as "articles", while others were classified as "notes", "short communications", or were redirected to separate publications.

Specialist terminology played a significant part in this division, at first between the amateur and professional, and later within specializations of the disciplines themselves. Not only was the use of "jargon" at issue, but also perceived biases toward particular theoretical orientations. In archaeology for instance, such issues divided classical archaeologists from prehistorians, and those working in the academy from those working in cultural resource management.

The conservation journals provided evidence for similar issues. For instance, the original intent of Studies was to serve the interests of those in the "lab" as well as "the studio" -- that is, the scientists involved with analytical research, as well as restorers, craftsmen, and conservators. With time, however, technical and analytical issues began to predominate, leaving the perception, perhaps, that papers addressing practical applications or techniques were unwelcome or less valued.

By the late 1970s and JAIC's arrival, the conservation field had already become more specialized as expert knowledge on particular materials, techniques, and equipment continued to develop. Changes in editorial policies, format, and guides to authors reflected this fact through the presence of more detailed standards for manuscripts and development of formal mechanisms for reviewing and accepting submissions.
Although overseen by advisory bodies, the voice of individual editors clearly shaped the content and tone of some of the earliest journal issues in both disciplines. *Antiquity* is the strongest example, having had only two different editors for the first 60 years. It is also the only journal that devoted significant space to its editorials and addressed such wide-ranging issues within the community. The first publications of the AIC were also overseen by a single editor for an extended period of time (15 years), and this editor also favoured regular editorials that commented on developments in the field. *Studies in Conservation* also had a tradition of long editorships. During its first 30 years, only four different editors were involved (with the exclusion of one editor who took on this role for only one issue).

Changes in each journal’s appearance usually followed changes in editorship, reflecting each editorial generation’s view of professionalism. This often meant broadening the journal’s scope by including more articles or special sections, or by publishing special issues highlighting special topics. Other editors related a professional approach to the inclusion of works in other languages, or the use of “scientific” terminology. *American Antiquity* added guidelines for citing dating methods, and *Studies* augmented instructions to authors with standards for chemical nomenclature.

One disciplinary distinction between these journals existed in the way each handled debate. Special sections labelled “Debate” or “Comments” served this purpose in the archaeology journals. However, in the conservation journals, this form of narrative was mediated through the “letters to the editor” section until relatively recently. Debate is now encouraged to take the form of full-length, well-supported arguments rather than short letters of disagreement. Nevertheless, special sections expressly for this purpose do not appear.

In this chapter, I have provided support for the premise of other scholars (Beedles and Petracca 2001, Crane 1967, Freedman and Adam 1996, Hyland 2000 and 2002) that the values and identity of disciplines are reflected in the manner in which they present
themselves through written texts. I have also shown that this disciplinary identity can vary locally. In the next chapter, I will present my analysis of several samples of these texts in comparison to my analysis of the verbal texts from the case studies described in Chapters 6-9. In doing so, I explore the nature of professional identity further by identifying the boundaries between these communities of practice as well as the trading zones that may unite them.
Chapter 11 – Analysis: The Search for Boundaries and Trading Zones

The data I analyzed for this research were from two sources: written texts and transcripts of narratives and discussion. The written texts I analyzed were from conservation and archaeological journals from 2004. The transcripts were of talk during the activities of groups of archaeologists or conservators, activities of individual archaeologists or conservators, or while conservators and archaeologists were involved in activities together. In this chapter, I will describe the results of my analysis, and in the chapter to follow, I will discuss what these results can tell us.

11.1 General Characteristics of the Written Texts

All articles published in 2004 from my sample of archaeology and conservation journals were analyzed. Eighty-six articles were from archaeology journals -- 50 from Antiquity, and 36 from American Antiquity. Thirty-five of the articles I analyzed were from conservation journals, 20 from Studies in Conservation, and 15 from the Journal of the American Institute of Conservation (JAIC).

Let us begin our review of the general characteristics of the written texts by examining authorship. One difference in convention regardless of discipline appears to be the number of co-authors (Figure 11.1.1). Articles published in the UK contained the

![Figure 11.1.1 Comparison of co-authorships by country of publication and discipline](image)
greatest number of co-authors, with one article in *Antiquity* listing ten authors, and another in *Studies in Conservation* listing seven. The maximum number of co-authors for a US journal was five in *American Antiquity*, and the greatest number of co-authors in the *JAIC* was four.

However, regardless of publication country, disciplinary conventions for the number of co-authors appeared to hold. In the archaeology journals, sole authorship was most common, while in the conservation journals co-authorship was just as common as sole authorship.

An examination of authorship by gender showed that for publication year 2004, fewer women than men were authors of articles in either conservation or archaeology journals (Figure 11.1.2). However, a higher percentage of women were authors in conservation journals (38%) than in archaeology journals (22%). Women were also lead authors more often in conservation journals (46%) than in archaeology journals (26%).

![Figure 11.1.2 Comparison of authorship by discipline and gender](image)

However, this data on gender must consider that gender of an author was sometimes impossible to determine if authors used initials instead of full names. Use of initials was a more common convention in the UK archaeological journal than any of the other journals.
The employment setting for authors also appeared to differ by discipline (Figure 11.1.3). However, this was also difficult to determine since author contact information may not represent an author’s primary place of employment. In this instance, I limited my analysis to the American journals since the general employment setting for author affiliation was easier for me to identify. Authors of articles in *American Antiquity* were most frequently affiliated with academic institutions (54.2%), while most articles in the *JAIC* were from authors in private practice (32%) and museums (26%).

![Employment Setting](image)

**Figure 11.1.3** Comparison of US journal authors by discipline and employment setting

With the exception of *Studies*, geographic location of authors mirrored the country where the journal was published. Most of the authors in *Antiquity* were from the UK (26%), although of all the journals, it included authors from the widest geographic distribution (26 different countries). *American Antiquity* exhibited the most localized geographic scope for its authors. Not only were authors almost exclusively from the US, but a majority (36%) were from the Southwestern region. Only two co-authors were from outside of the US, one from Russia and another from the UK.\(^{14}\)

\(^{14}\) The Society for American Archaeology (SAA) also publishes *Latin American Antiquity*, which no doubt contributes to the fact that authors from Latin America were not represented.
In comparison to the American archaeology journal, the American conservation journal included authors with a much broader geographic distribution. Although most authors were from the US (74%), four were from the UK, three were from Italy, two were from the Republic of Korea, and one was from Germany. In contrast to the American archaeology journal where most authors were from the Southwest, a majority of the authors in the American Conservation journal were from the Northeast region (29%).

Authors in *Studies in Conservation* represented the broadest geographic distribution -- Poland, Spain, the Netherlands, Denmark, Finland, and Sweden. However, most authors listed addresses in Italy (26%), the US (21%), or the UK (20%).

Let us now examine various publication conventions between the disciplines. All of the journals included editorial commentary, book reviews, and articles describing project reports or experimental results. However, conservation journals were less likely to include a dominant place for critical debate, whereas the archaeological journals highlighted sections specifically for this purpose. Another difference was the extent and placement of author information. In the archaeological journals, author information was limited to affiliation, and this was placed on the article’s first page. In the conservation journals, author information appeared at the end of the article and was biographical, including details concerning education and experience. Another difference between the disciplines was that the conservation journals often included specific details regarding a technique or method as well as lists of materials and suppliers.

The number of cited references also differed between disciplines. The conservation journals typically included fewer cited references, averaging 22 references for the *JAIC* and 25 for *Studies*. *American Antiquity*’s articles averaged 84 references while *Antiquity* averaged 39. In some instances, the conservation journals also included references for “Further Reading”.

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Another difference in disciplinary conventions related to the manner in which data were displayed, although some differences also existed by place of publication (Figure 11.1.4). Maps were much more likely to be used in archaeological texts. Of note is the fact that the only conservation article including a map discussed building materials at an archaeological site. Also noteworthy is that this article appeared in the conservation journal published in the UK.

**Figure 11.1.4** Comparison of data display conventions by discipline and country of publication

Drawings or photos were used more often in conservation articles, although they were more common in the archaeology articles published in the UK than in the US.

Charts and graphs appeared to be less favored by the authors of the archaeology journal in the UK and the conservation journal in the US. All of the journals used tables as a way to present information; however, this was less common in the American conservation journal.
11.2 General Characteristics of the Verbal Texts

From 2003 to 2005, I recorded 176 speech events involving archaeologists and conservators. For the purpose of this research, I define a speech event as a discussion between individuals or a narrative by one individual to a group or another individual. I identified the start and end of a speech event as a shift in topic or the beginning and end of discussion during a task.

Borrowing from Hymes' model of interaction (1972), the speech events I recorded can be described according to several characteristics: where the event took place, who participated, the purpose and duration of the event, levels of formality and tone, genre (whether the event was a narrative or a discussion), and the outcome of the interaction.

Most of the speech events I recorded took place during activities on site (85%) (Figure 11.2.1). Although most these on site activities took place in the excavation units, approximately 12% took place in archaeology and conservation labs. Since I was also interested in recording talk in formal settings, a few of the recordings were also of presentations at professional conferences or discussion during small meetings (15%).

These settings encompassed a mix of atmospheres and genres: formal conference presentations and videotaped narratives where talk could not be interrupted, semiformal tours where questions could be asked, and casual interaction as tasks were undertaken in the labs and excavation units.

![Figure 11.2.1 Relative percent of transcripts by setting](image-url)
Of the 176 speech events recorded, I included 47 (27%) in the final analysis. My sample selection was based on the quality of the recording, the participants involved, and the nature of the activity. Quality of the recording was a limiting factor particularly for recordings on site. Noise from shovels and trowels, other crew members talking, canvas flapping in the wind, and dirt and stones hitting against the sides of sieving screens often made conversation inaudible. Discussion in the lab was also difficult to capture since this workspace was often a hub for simultaneous activities, and the hard surfaces of counter tops, cabinets, and floors impaired acoustics. Similarly, recordings from conferences often suffered if speakers did not use microphones, particularly during discussion, or if I failed to place my microphone in an appropriate location.

Although data collection included a nearly equal representation of settings and participants, the resulting data set for analysis skewed toward discussion between archaeologists and conservators on site (49%) (Figure 11.2.2). In addition, slightly more of the transcripts I analyzed were from the talk of conservators (30%) than from the talk of archaeologists (21%). In part, this was due to the opportunistic nature of my study. I recorded speech events as opportunities arose, and I was able to participate in more activities with conservators than archaeologists.

![Pie chart showing relative percent of transcripts by participant type](image)

**Figure 11.2.2 Relative percent of transcripts by participant type**
As Figure 11.2.3 indicates, a majority of the transcripts represent discussion (68%). Most of the discussion captured was between conservators and archaeologists (47%). However, 8% of the transcripts were of discussions between conservators, and 4% represent discussion between archaeologists. Of the narratives, most were from formal or semiformal settings such as conferences, project videos, or tours. More of the narratives were by conservators (23%) than archaeologists (19%).

**Figure 11.2.3** Relative percent of transcripts analyzed by genre (discussion versus narrative) and discipline.

In general, the purpose of most of the talk I transcribed was to discuss or explain a project, process, or task. Exceptions included some of the conference presentations, which were commentaries or critiques concerning the profession of conservation or archaeology. Of the speech events involving a process or task, approximately half (53%) were associated with decision-making.

**11.3 The Frequency and Context of Risk Concepts**

Because risk emerged as a significant theme during preliminary discussion with conservators, I chose to use this theme as a "filter" through which to analyze the data. To do so, I developed a code list of concepts from the risk literature, and expanded the list further as I discovered related concepts within the transcripts and texts I analyzed. I then identified instances of these codes in each article and transcript, and analyzed the
frequency and contexts of their occurrence. Frequency counts were based on one instance of a “risk code” in an article or transcript. In general, the codes fell within two general categories: those relating to “Harm or Potential Harm” and those relating to “Certainty or Uncertainty”. Appendix 9 lists these codes, the definitions I used to distinguish them, and each code’s general category.

In addition to the frequency of the risk codes used by each discipline, I also examined the contexts of codes used in common by both disciplines in order to examine differences, if any, in the meanings of these concepts.

11.3.1 The Frequency of Risk Concepts

Results presented in the following section compare the frequency of risk concepts by discipline and genre. In this instance, genre refers to the form of the text — that is, whether it was written or spoken.

We can begin by comparing the frequency of risk concepts by discipline. Figure 11.3.1.1 shows that of the 21 risk concepts defined, 12 (57%) were used more frequently by conservators than archaeologists. These included “caution”, “(un)certainty”, “concern”, “future”, “damage”, “loss”, “prevention”, “problems”, “protection”, “safety”, “saving”,

![Figure 11.3.1.1 Comparison of risk concept frequencies by discipline](image)

Figure 11.3.1.1 Comparison of risk concept frequencies by discipline
and “stability”. Most of these concepts (75%) fall within the general category of “Harm or Potential Harm”. Nine (43%) of the 21 risk concepts were used more frequently by archaeologists than conservators. These included “accident/disaster”, “benefit”, “danger”, “opportunity”, “possibility”, “predictability”, “probability”, “survival”, and “trying”. A majority these concepts (67%) fall within the general category of Certainty or Uncertainty”.

Two concepts were used in similar frequencies by both conservators and archaeologists. These included “(un)certainty” (78% vs. 77%), and “possibility” (88% vs. 90%).

An analysis of the concepts by genre within each discipline presents other patterns. Figure 11.3.1.2 compares the frequency of risk concepts used by archaeologists in speaking versus writing. Concepts relating to “danger”, “predictability”, and “prevention” did not appear in the conversation of archaeologists at all, while “trying” appeared in each conversation recorded. With the exception of “accidents”, “concern”, and “trying”, risk concepts occurred more often in the writing of archaeologists than in their conversation.

Figure 11.3.1.2 Comparison of risk concept frequencies in archaeology articles and transcripts
A closer look at the most common concepts also shows differences by genre. In the written archaeological texts, the most frequently used concept was "possibility" (96%), followed by "probability" (94%), "problems" (87%), and "(un)certainty" (84%). In conversation, the trend is nearly reversed with "(un)certainty" as the most common concept (65%), followed by "problems" and "probability" (55%), then "possibility" (45%).

Figure 11.3.1.3 compares the frequency of risk concepts used by conservators in speaking versus writing. As in the archaeological texts, some concepts appeared in one genre but not the other. For instance, concepts relating to "danger", "predictability", and "accidents" appeared in the literature of conservators but not in conversation.

Figure 11.3.1.3 Comparison of risk concept frequencies in conservation articles and transcripts

In general, risk concepts appeared more frequently in the conservation literature than in conversation. The most common risk concept in the conservation literature was "problems", which appeared at least once in every article. The second most common concept was "possibility" (97%), followed by "(un)certainty" (86%), and "probability" (80%). In the conversation of conservators, no single concept predominated.
“Possibility”, “problems”, “and “trying” appeared in equal frequencies (67%), and these concepts were used only slightly more often than (un)certainty” (60%).

Although “probability” occurred in 80% of the written texts of conservators, this concept was used much less often in the conversation of conservators (40% of the transcripts). In fact, conservators appeared to prefer “possibility” to “probability” in written texts and conversation. “Possibility” occurs in 97% of the articles and 67% of the transcripts, while “probability” occurs in 80% of the articles and 40% of the transcripts. Archaeologists, however, used these concepts almost equally as often in written texts (95% and 94%), and in conversation, archaeologists used “probability” more often than “possibility” (55% and 45% respectively).

Let us now examine the frequency of risk concepts by genre and begin with the written texts. Figure 11.3.1.4 illustrates that in written texts, the concept “possibility” was used almost equally as often by conservators (97%) as archaeologists (95%). The risk concept “(un)certainty” was also often used, although slightly more so in writing by conservators than archaeologists (86% vs. 79%). Similarly, members of both disciplines referred to “danger” in the written texts almost equally as often (46% vs. 42%).

Figure 11.3.1.4 Comparison of risk concept frequencies in articles by discipline
One of the greatest differences between the disciplines in concepts used in the literature related to "safety". Conservators used the concept in 63% of the articles, whereas only 33% of the archaeological texts contained the concept. Conservators also used other concepts in the written texts more than archaeologists including "loss" (60% vs. 37%), "protection" (54% vs. 30%), "concern" (23% vs. 1%), and "damage" (69% vs. 48%).

Another disciplinary difference in the written texts was that archaeologists used concepts relating to survival (45% vs. 23%) and benefits (24% vs. 14%) more often than conservators. In addition, the concept "probability" was found more frequently in the articles of archaeologists than conservators (94% vs. 80%).

Let us focus next on the verbal texts, or transcripts of talk. As illustrated in Figure 11.3.1.5, conservators spoke nearly as often about "(un)certainty" as the archaeologists (60% vs. 63%). Unlike the written texts, similar frequencies were found in talk of conservators and talk of archaeologists for concepts relating to "caution" (33% and 36%), "survival" (20% and 18%), "future" (20% and 18%), "safety" (7% and 9%) and "saving" (7% and 9%). As mentioned earlier, members of neither discipline spoke directly of "danger" or "predictability".
Talk within the disciplines varied in several ways. Conservators never used the concept “accidents”, and archaeologists never spoke of “prevention”. Conservators also spoke more often than the archaeologists about “benefits” (20% vs. 9%), “concerns” (40% vs. 18%), “damage” (33% vs. 17%), “loss” (27% vs. 9%), “opportunities” (27% vs. 9%), “problems” (67% vs. 55%), “protection” (20% vs. 9%), and “stability” (27% vs. 9%). Three concepts were used more often in talk by archaeologists than conservators: “trying” (100% vs. 67%), “probability” (55% vs. 40%), and “accidents” (18% vs. 0%).

So far, we have compared written and verbal texts within disciplines. Let us now examine verbal texts that represent discussion between disciplines. Figure 11.3.1.6 compares transcripts from each discipline to transcripts from discussion between archaeologists and conservators.

**Figure 11.3.1.6 Comparison of risk concept frequencies in transcripts of discussion between conservators and archaeologists**

Fifteen (71%) of the risk concepts appear in transcripts of discussion between the disciplines. Although “survival” occurred in 20% of the conservators’ transcripts and 18% of the archaeologists’, it did not appear in any of the transcripts of discussion.
between the disciplines. Likewise, "benefit" and "opportunity" did not appear. However, the concept "danger" did appear in transcripts of discussion between the disciplines (although infrequently), but not in transcripts of the archaeologists or conservators.

Some concepts that were used more frequently by one discipline occurred at even greater frequencies in discussion between the disciplines. For instance, "concern" occurs in 40% of the transcripts of conservators but in only 18% of the transcripts of archaeologists. However, in discussion between the disciplines, "concern" appeared in 48% of the transcripts. Similarly, "probability" appeared in 55% of the transcripts of archaeologists and 40% of the conservators; however, it appeared in 67% of the transcripts of discussion between archaeologists and conservators.

Four concepts, "caution", "(un)certainty", "safety", and "saving", appeared to remain at relatively similar frequencies whether talk was within or between disciplines.

11.3.2 The Contexts of Risk Concepts

Differences and similarities in the frequency with which conservators and archaeologists used risk concepts is only part of the story to unfold. Another dimension of the results involves an analysis of the way in which concepts common to both disciplines were used differently. In the following section, I present the results of an analysis of several concepts that were used in similar frequencies by both conservators and archaeologists in articles and transcripts: "danger", "safety", "(un)certainty", and "possibility".

A preliminary review of all occurrences of these four concepts revealed three general context categories. Association with:

- Objects or sites and their characteristics or properties
- Procedures or techniques
- General issues regarding human behaviour in the past or present
The following results represent the frequency with which the four risk concepts appeared in association with one of these context categories.

Let us begin with an examination of all written and verbal texts and the context of risk concepts related to the general category “Harm or Potential Harm”: “danger” and “safety”. As Figure 11.3.2.1 illustrates, the concept “danger” did not appear in any of the transcripts of the archaeologists or conservators. However, it did appear in discussion between the disciplines, where it was associated to an equal degree with both procedures and techniques and object and sites, but not at all with humans and human behaviour.

Figure 11.3.2.1 Comparison of contexts for occurrences of "danger"

The literature presents a different picture, where an association between “danger” and humans or human behaviour appeared in similar frequencies for both conservators (22%) and archaeologists (26%). Nevertheless, a finer-grained examination shows differences. For the archaeologists, the concept often referred to ancient populations. For example, one article about pre-colonial settlements on islands off of the California coast cited “life-threatening” voyages of small craft on the open seas (Cassidy et al. 2004, 114). Another article discussed ancient settlement patterns in the American Midwest and the fact that surpluses “can be manipulated to manage the risks of potential subsistence
shortfalls” (Schroeder 2004, 821). In another instance, an author described ancient ramparts built in response to “military threats” (Brather 2004, 321).

A few archaeological articles addressed dangers to modern populations. One example was a text by David et al. (2004, 159) regarding the use of oral histories from the Mua, a community of Torres Straits Islanders. According to the authors, these data could produce “threatening results”—that is, interpretations that challenge the accepted archaeological evidence. In another article, the authors described infant burials by drawing on ethnographic analogies from the traditions of a modern community in Turkey to note that “danger comes from vengeful ancestors that can be bad-tempered and can easily harm a ‘boneless’ baby” (Borić and Stefanović 2004, 542).

Authors of the conservation literature also discussed dangers to people and other living things. However, unlike the archaeologists, the people discussed were not distinct populations outside of their own disciplinary community. During the 2004 publication year, conservators were more likely to write about dangers to themselves and their co-workers or to the current population at large. For instance, Ellis and Heginbotham (2004, 25) discussed health hazards of solvents necessary to reverse Paraloid B-72, and Fields et al. (2004, 70) commented on the fact that “surfactants are harmful to living things”.

Authors of the archaeological literature rarely wrote about dangers to objects. One exception was an article describing the burial environment of bronzes, and how “graves, settlements or hoards, were assessed as factors in the vulnerability of bronzes to their environment” (Ullén et al. 2004, 385). It is interesting to note that the lead author of this article was affiliated with a museum. More common but still relatively rare for this publication year was discussion about dangers to sites. One example was an author who described a rock art site and noted that although it “is not threatened with immediate destruction, it is clearly only a matter of time” (Boivin 2004, 50).
Conservators were much more likely to write about dangers in association with objects than were the archaeologists (56% vs. 26%). Examples included a study of museum light levels where the author commented that "among the various environmental factors that are potentially hazardous for works of art, light is certainly one of the most dangerous" (Bacci et al. 2004, 85). In another instance, authors wrote that "continuing efforts to protect bronze works of art from the hazards of the outdoor environment are vital" (Ellingson et al. 2004, 53). Elsewhere, authors discussed "textiles at risk from anoxia" (Rowe 2004, 268). During the 2004 publication year, there were no instances of the risk concept "danger" in association with archaeological sites in the conservation literature.

Although "danger" appeared in association with processes or techniques in the texts of both disciplines, this association was more common for the archaeologists (46%) than the conservators (19%). A closer examination reveals that, in many instances, the specific context of the concept for the archaeologists involved the process of interpretation. For instance, Mainfort and Kwas (2004, 763) noted "the danger of basing conclusions on abnormal objects, or on one or two unusual types". In another article, Brather (2004, 319) commented that "it would become dangerous to expect exact chronological answers only from pottery", and elsewhere DeBoer observed that specific evidence "did not threaten [a previous researcher's] verdict" (2004, 85).

In the conservation texts, "danger" was associated with a technical process or approach. For example, Casadio and Tonoilo (2004, 5) noted that testing would avoid the "risk that the solvent's penetration depth may be observed and recorded, rather than the polymer's". In another instance, Rowe (2004, 264) comments that in order "to reduce this risk further samples were placed in the spectrometer directly from the anoxic treatment bags".

Of note is the fact that "danger" was associated with objects or sites more often during discussion between archaeologists and conservators (50%) than during talk among...
archaeologists (26%), but to a similar degree in the talk of conservators (55%). For procedures and techniques, we see an opposite trend. "Danger" was associated with procedures and techniques more often in discussion between the disciplines (50%) than in talk among the conservators (19%) but in relatively similar frequencies to talk of archaeologists (46%).

An examination of "safety", the inverse of "danger", shows a closer alignment between the disciplines (Figure 11.3.2.2). The concept rarely appeared in the verbal texts -- once in the transcripts of archaeologists, once in the transcripts of conservators, and once in the transcripts of discussions between archaeologists and conservators. The concept was associated with procedures and techniques in talk among archaeologists and discussion between archaeologists and conservators. However, for conservators, the occurrence of "safety" was associated with objects and sites.

Figure 11.3.2.2 Comparison of contexts for occurrences of "safety"

The picture is more complete for the literature, where the greatest difference in context involved the association of "safety" with humans and human behaviour. In the archaeological literature, 25% of the occurrences of "safety" are associated with humans or human behaviour, while in the conservation literature this is the case for only 12% of
the occurrences. Otherwise, the trend in the literature is similar, although less marked, than with the concept “danger”. Conservators associated “safety” more often with objects and sites (47%) than procedures and techniques (39%), and archaeologists associated the concept slightly more often with procedures and techniques (38%) than objects and sites (35%).

Let us turn now from concepts relating to the general category “Harm or Potential Harm” to an examination of concepts relating to the general category “Certainty or Uncertainty”. One obvious risk concept to examine from this category is “(un)certainty”, but another risk concept to consider is “possibility”. Unlike “danger” and “safety”, these concepts were well represented in both the written and verbal texts within the disciplines. In Figure 11.3.2.3 we can see that the risk concept “(un)certainty” appeared with the greatest frequency in talk among the conservators related to procedures and techniques (92%). This association is also most frequent, although not nearly to the same degree, in the conservation literature (44%). In the talk of archaeologists, “(un)certainty” is most frequently associated with humans and human behaviour (50%), and this trend holds for the archaeological literature (43%).

![Figure 11.3.2.3 Comparison of contexts for occurrences of "(un)certainty"](image-url)
Archaeologists and conservators associated "(un)certainty" with objects and sites in similar frequencies in the literature (27% and 31% respectively), and archaeologists associated the concept to objects and sites slightly more often in their talk (32%). However, conservators rarely associated "(un)certainty" with objects and sites in their talk (8%).

Of note is the fact that during discussion between the disciplines, "(un)certainty" was associated most often with procedures and techniques (67%), reflecting the trend in talk of conservators. In addition, unlike in the talk of conservators themselves, humans and human behaviour was associated in talk between the disciplines (18%), although to a lesser degree than in talk of the archaeologists (50%).

Associations of the risk concept "possibility" show some similarities and differences to "(un)certainty". In Figure 11.3.2.4, we can see that, as with "(un)certainty", conservators associated "possibility" most frequently with procedures and techniques, both in the literature (58%) and in talk (71%). However, unlike "(un)certainty", conservators associated "possibility" with humans or human behaviour in their talk.

![Figure 11.3.2.4 Comparison of contexts for occurrences of "possibility"](image)
Archaeologists associated “possibility” with humans and human behaviour less frequently than “(un)certainty” in their literature (38% vs. 43%) or their talk (20% vs. 50%). They also associated the concept with procedures and techniques more frequently than “(un)certainty”, particularly in their talk (40% vs. 18%).

Of interest is a comparison of talk between the disciplines to talk within the disciplines. As with “(un)certainty”, procedures and techniques was the most frequent association and mirrored the most frequent association of conservation verbal tests. However, in this instance “possibility” was associated with humans and human behaviour in more of the occurrences than “(un)certainty”. In fact, the association of these occurrences during interdisciplinary conversation was more frequent than in the talk of the conservators (14%) or the archaeologists (20%). In addition, objects and sites were not discussed in association with “possibility” at all.

11.4 Summary and Conclusions

In this chapter we have seen the results of a comparison of archaeological and conservation written and verbal texts, which has helped us to identify boundaries and trading zones between the disciplines. We identified boundaries through differences, and trading zones through areas of commonality.

Some of the disciplinary differences we identified were shown through an examination of authorship and the presentation of data. For instance, conservators were much less likely to be sole authors than were the archaeologists. Authors of the conservation texts were also much more likely to work in private practice or to be affiliated with museums, while authors of the archaeological texts were more often affiliated with academia. We also saw that the disciplines differed in the way they presented data. During publication year 2004, authors of the conservation texts used more photographs and drawings of objects, while authors of the archaeological texts commonly included maps and tables.
Of note was the fact that the UK publications showed more commonalities between the disciplines than did those from the US. For instance, co-authorship was more common in the UK archaeology and conservation journals and maps were included in the UK conservation journals more often than in the US conservation journal.

A filter of risk provided us with a finer-grained view of the disciplines in two ways: through an examination of the frequency with which risk concepts were used, and through their context. An analysis of the frequency of risk concepts by general category suggested that conservators focused on issues of “Harm or Potential Harm”, while issues of “Certainty or Uncertainty” were more significant to the archaeologists.

Frequencies of risk concept occurrence also indicated that conservators and archaeologists presented themselves differently in writing than in talk. For instance, conservators and archaeologists wrote about “danger”, but the concept did not appear in talk. Both conservators and archaeologists also wrote about “accidents and disasters”, but conservators did not discuss it. The analysis of risk concept contexts illustrated that conservators talked of “(un)certainty” in relation to procedures and techniques almost to the exclusion of objects and sites and humans and human behaviour. However, in their writing, the concept was associated more evenly among the three topics.

An examination of the contexts of risk concepts pointed us even closer toward areas of significance to the disciplines. Conservators were more likely to associate “danger” with objects and sites, and archaeologists were more likely to associate the concept with procedures and techniques. Although archaeologists and conservators associated “danger” with humans and human behaviour at almost equal frequencies, a closer examination of context illustrated that for archaeologists the association involved humans and human behaviour of the past, while for conservators, the association was with humans and human behaviour in the present. Conservators associated “(un)certainty” with procedures and techniques, while archaeologists associated the concept most often with humans and human behaviour.
Of particular significance were differences in the contexts of risk concepts during discussion between the disciplines versus discussion within them, suggesting the influence of one discipline on the other. For instance, conservators often associated "(un)certainty" with procedures and techniques and, although this association was not common for the archaeologists, in discussion between the disciplines the association was more frequent. Similarly, conservators did not discuss "(un)certainty" in association with humans and human behaviour among themselves but did so in discussion with archaeologists.

Interestingly, some concepts exhibited more commonality between the disciplines than others. For instance, the disciplines more closely aligned in relation to the concepts "safety" and "possibility" than to "danger" and "(un)certainty".

These results, particularly in consideration of the broader contexts within which they were found, present us with several issues of consequence for the practice of archaeological conservation. We will explore these issues in the following chapter.
Chapter 12—Discussion: The Analytical Results in Context

In a symposium on language, interaction, and culture, one of the participants commented that in his view, text analysis is used to “tell us where to look, not what to see” (Rampton 2004). With this perspective in mind, let us consider where the results of the analysis presented in the last chapter lead us.

In general, the quantitative results suggested that one of the primary boundaries between the practice of conservation and archaeology is that conservators focus on harm or potential harm, particularly with regard to objects and sites, while archaeologists are more interested in issues related to certainty or uncertainty and human behaviour. This result would not surprise some, since to a degree, it supports general stereotypes of the conservator as the caretaker focused on objects, versus the archaeologist engaged in discovery of the human past. However, the quantitative results and observations from the field also suggest that these stereotypes of conservators are deeply embedded and, to some extent, perpetuated by conservators themselves. This finding stands in contrast to perceptions within the conservation community that the conservator’s role is expanding, and that the process of discovery and acceptance of uncertainty has become more integrated into conservation practice.

Let us examine some of the specific ways that this circumstance was made manifest in the view of archaeological conservation practice revealed in my study.

12.1 Interpretation and Authority

As Tilley states, “all archaeology is an interpretative activity. This hermeneutic dimension to archaeological research is absolutely fundamental” (1989, 277). The importance of the concept to archaeologists is also illustrated by debates on the very use of the term (Binford 2001).
Conservators also acknowledge the significance of interpretation. According to Keyser,

Conservation is more than a set of physical preservation techniques, it is also an interpretive activity which involves a complex of artistic, scientific, and historical ideas which influence the approach to treatment (1990, 378).

Jedrzejewska notes that,

To make decisions it is necessary to know exactly what the object represents. This raises the problem of interpretation...the whole work of a conservator is a constant sequence of interpretations, as this is what guides his decisions and procedures. He has to be constantly aware of what he discovers and of what is happening at any moment of his close contact with the object (Jedrzejewska 1976, 6).

Nevertheless, interpretation may not be a concept often associated with conservation by those outside of the profession, in this case, archaeologists. Factors contributing to this circumstance may involve perceptions of authority and issues of time and place.

Consider, for instance, this narrative from a conservator describing a wall painting at an archaeological site that she just finished recording:

This is one of the...few paintings on a south wall and its association with this...oven structure that you can see...is very unusual. Apparently they usually avoided...decorating walls associated with the hearths according to [the archaeologist]...so maybe...that's evidence for some sort of exhaust...going...in another direction either above...or towards the face [but not] towards the wall...but I'll leave that to the archaeologist to interpret.

The conservator's insights about why some walls may not have been decorated appeared relevant, but she did not consider sharing them with the archaeologists. This is particularly noteworthy since the director of this project encouraged the team to record their insights each day in diaries as an aid to interpretation. For example, one archaeologist wrote the following narrative in a diary entry:

Skeleton 4593 has now been lifted. The preservation of the bones is not very good although I managed to get some measurements from some of the long bones. The bad condition of bones on the upper body (especially sternum thoracic vertebrae) makes me think that an extra weight had been applied on this part of the body. Could it have been the weight of someone standing on the wooden plank in
order to remove the skull? During the work on this burial I spotted some cut marks on the anterior and posterior side of the atlas. These marks occur as clean, sharp, parallel lines. The sequence could be as follows, the body was buried, the grave was reopened after some time while there were some ligaments still remained. The remaining ligaments were carefully removed, the only damage being the cut marks mentioned above. This interpretation is supported by the fact that the hyoid bone had dropped onto the 3rd cervical vertebrae (this bone is attached behind the tongue) which suggests that skull was removed after the body had undergone a certain amount of decomposition. This is my first interpretation. It might change later.

On this excavation, interpretations were also freely given in tours of the labs for other team members. For instance, in the following narrative an archaeologist who analyzed the flaked stone tools shared his ideas with the archaeologists who excavated them:

But there could have been very strong notions of appropriateness (...) like (...) this is a cattle killing implement (...) or it could be an index of certain clan groups (...) certain projectile points and the way they [were] hafted could be an indication of (...) social identity or a mixture of all these sort of things.

The conservator’s observations did not seem any more speculative than the archaeologist’s in these examples, yet she did not consider sharing them. The project director seemed to encourage ideas; nevertheless, do the conservators assume that their ideas are unimportant or believe that to offer them would be inappropriate?

In her work on the politics of knowing, Fricker presents the concept of testimonial injustice, which she describes as “prejudice on the hearer’s part [that] causes the hearer to give the speaker less credibility than he otherwise would have” (2006, 3). Fricker relates testimonial injustice to identity power, which she describes as “operations of power which are dependent upon agents having shared conceptions of social identity” (2006, 10). As she elaborates:

Power will influence hearer-response in a less obvious way. Rather than turning belief into non-belief or vice versa, it will surreptitiously raise or lower the hearer’s degree of belief, by inflating or deflating the credibility he affords the speaker. Epistemic trust, like other kinds of trust, has an affective aspect that is influenced – sometimes rightly, sometimes wrongly – by how the hearer perceives the interlocutor. Its key affective aspect is a kind of minimal interpretative sympathy with the speaker that allows signs of her trustworthiness to be picked up on in the hearer’s
perception of her. Even such minimal sympathy will be signally uneven across differences of social identity and especially where those differences of identity are characterized by dramatically unequal relations of power... the social "otherness" of the speaker is fundamental to the prejudiced reception their word is given (Fricker 2006, 10).

In an extension of this concept of identity power, the conservator may withhold her interpretation because she distrusts that her ideas, stemming from another disciplinary community, will be welcomed, considered, or appropriate. A follow-up discussion with the conservator in this example revealed that the latter was the case. She considered an offer of a speculative interpretation as a violation of her code of ethics, since by doing so she would be practicing outside of her area of expertise.

In other instances, archaeological conservators have noted that they are often removed from the interpretive process by time and space. Odegaard (2002) describes a typical scenario:

More often, the interpretive observations of conservators are only received during the processes of post excavation care when the artifacts have been accessioned and cataloged into a museum collection. This is usually long after the archaeological investigation and written interpretation phases have been completed. Also, because only certain artifacts may be selected for individual museum accessioning and cataloging, the observations made about them by the conservator during examination, cleaning, stabilization, storage, and exhibition remain in conservation files and are never incorporated back into the academic body of knowledge regarding the archaeological investigation (Odegaard 2002, 13).

Notably, participation in the interpretive process is also a topic of concern among archaeologists. A narrative from one project diary touches on issues involving interpretations from "specialists" (archaeologists analyzing the finds who are often affiliated with academic institutions) and "excavators" (archaeologists who are in private practice). The project director writes that:

I think everyone wants to integrate and to circuit information. They all recognize the need for that and the advantages it brings. But it also brings the need for communication across 'boundaries' and respect for 'differences'... We clearly need to find a way of defining and respecting each other's domain. None of us have been exposed to this amount of integration before, and it involves
trying to talk over major divides such as the UK and USA split between academic and contract. I think there is a real need to accept field excavation as itself a professional specialization; but at the same time the field specialists need to accept that they need to allow other types of specialist 'in'. This is asking a lot on both sides.

Comments by other archaeologists in a different context express some of the tensions regarding this topic:

Most curatorial archaeologists are graduates of field archaeology, and, like most field archaeologists, tend to have a limited grasp of the significance of artefacts and the analytical options available. Evaluation and excavation briefs rarely place any emphasis on the analysis of finds other than to provide dates for features (Blinkhorn and Cumberpatch 1998).

Others argue that the excavator is instrumental to interpretation. As an archaeologist notes in her diary:

Just as specialists have trained in their particular field so too have excavators in reading the ground; no one is denying that mistakes are made, so long as those mistakes are recorded, uncertainties are recorded, and the interpretation is open, but no one can interpret better than those in the field…There are many things a cut can tell us that is not adequately caught in profile alone…our sequence of excavation is recorded in the matrix, whether right or wrong, because we attempt to dig stratigraphically. Our thought processes change constantly, and that's what a diary records, how often do the thought processes of a specialist get recorded?

One indicator of a profession's authority is its visibility as a discipline with "expert" status. According to Abbot (1988), society confers expert status through the completion of specialized training, advanced degrees, or accreditation. In the US, all of these issues are relevant.

Specialized training for conservators in the US is difficult to achieve. Conservation topics are rarely touched upon in undergraduate courses, let alone offered as separate topics15. For example, a relatively recent initiative of the Society for American

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15 Notably, topics involving underwater archaeology are an exception. For instance, Corfield (2007) states that "there is at least one course at the Texas A&M University where maritime archaeology and conservation are taught within a single course structure".

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Archaeology (SAA) was the M.A.T.R.I.X. (Making Archaeology Training Relevant in the XXIst Century) project that involved creating, testing, and evaluating a new undergraduate teaching curriculum (Hayashida 2003). The purpose of the project was to create course materials so that “those educating and training future archaeologists [could] provide their students with the full range of knowledge, skills and abilities necessary to practice in the modern world” (SAA 2004a). Although it is encouraging that some of the courses include conservation topics, references to conservation are cursory or relate to issues of site management. For instance, the archaeological field methods course includes a module on in-situ conservation consisting of a handout of a newsletter article on why it is important to protect sites (Adrevfsky and Lipe 2003 and Lipe 2000a). The ethics and law course includes a module on heritage management with readings on general site management issues (Elia 2003), and a course on archaeological methods, theory, and practices does not appear to mention conservation at all (Hayashida 2003). Notably, conservation is addressed in most detail within a museum methods course exercise, but only with regard to objects housed within the museum (Kryder-Reid, 2003).

Even within the discipline of conservation in the US, archaeological conservation is barely visible as an area of specialist expertise. Students of various conservation programs in the US often gain training with objects of “archaeological” origin, and many students spend internships on site. Students from the Conservation Center of New York University have been involved in archaeological projects (mostly outside of the US) since the earliest days of the program (Majewski 1972). Nevertheless, none of the US programs provided specific, intensive training for students interested in archaeological conservation until a new program was created in 2004. This program is still in its infancy and may still be struggling within the university system.
PhDs in conservation are rare in the US, although numbers are increasing. Whether or not this is a positive trend for the profession is debated. Some conservators I interviewed believed a proliferation of PhDs would "set the bar" even higher for practitioners within a field that already requires many years of training and even more years of experience. Others were concerned that "hands-on" skills could become devalued or even lost.

As of this writing, only two PhD programs in conservation exist in the US. The first was created in 1990s at the University of Delaware and was designed as a program for "art conservation research" (Stoner 1992). In the late 1990s, the program was recreated as the Program in Preservation Studies, an interdisciplinary course of study administered by the Center for Material Culture Studies. Interestingly, the only other US PhD program in conservation also uses the term "preservation" rather than "conservation". The University of Texas, Austin, Department of Information offers PhD fellowships in preservation administration, preservation policy, and digital preservation. Perhaps by using the term "preservation", these programs trade on higher profile associations in the US with historic preservation. Many historic preservation programs in the US are administered through university departments of architecture, design, or urban planning -- fields that may attract more funding from the private and public sector than archaeology, art history, or museum studies.

Visibility for archaeological conservation in the US as a speciality with expert status is also low within the discipline's own professional organization. The American Institute for Conservation currently consigns archaeological conservators to a "discussion group" subsumed under the Objects Specialty Group. Until recently, no mention of the discussion group existed in any of the organization's literature or on any of the organization's web pages, notwithstanding the fact that the group is quite active. In contrast, in the UK, where many archaeological conservators in the US have been trained,
a speciality group for archaeology has been in existence for many years, first under the auspices of the UKIC, and now with the Institute of Conservation.

Another example of archaeological conservation's low visibility and authority in the US presented itself early in the research while I was searching for archaeological projects to observe. After learning about a project that seemed ideal, I approached the project's conservator and explained my objectives. As with all of the other conservators I consulted, she suggested that I first contact the archaeologist, since the project was under his direction. The archaeologist was supportive of my visit, but left the final decision up to the conservator. In follow-up conversations with the conservator, it became clear that I was presenting a risk to her, and I decided to rescind my request. Although she was a high status member of the faculty, I interpreted her cautiousness an indicator of how tenuous she perceived her authority to be within the university. Indeed, her caution was justified, since participation in any research presents risks, and ethnographic methods in particular can make participants feel open to evaluation. Visibility as an element of authority, therefore can bestow positive or negative impacts. It can promote recognition of "expert" status but also make one a target – in this case for scrutiny and potential criticism.

Interviews with archaeologists and conservators revealed that, as in any workplace circumstance, conservators must tread cautiously along the boundaries of authority. This may be more of a challenge for archaeological conservators working in the field than in museums. In several instances, participants mentioned scenarios where a conservator's challenge to a decision was interpreted as a failure to be "flexible" or to work as a "team player". The conservators believed that such challenges could easily contribute to perceptions that conservation impedes progress—a particularly worrisome circumstance in the field where work must progress rapidly. These concerns are indeed legitimate. However, to some archaeologists, questioning authority is not only viewed positively but may even be an essential strategy for the exchange of information. This tension
concerning challenges to authority was evident during one of my visits on site.

During work to investigate pigments in wall plasters, student conservators were asked to mechanically remove thin layers of plaster in order to uncover underlying layers of pigment. The task was difficult and progress was slow since, with the tools available, it was difficult to distinguish layers of plaster from layers of pigment. The students (S) decided that it was time to rethink the current strategy, and called on the supervising conservators (C) for advice. Shortly thereafter, the project director (PD) stopped by to monitor progress. In the discussion that followed, the project director was providing guidance, while appearing to create opportunities for the conservators to offer advice.

PD: clearly we need (...) to take a real core out don't we? some sort of block out

S: yes

PD: that we can clean under the microscope and look at the (...) 

S: yeah

PD: cross section paint layers and see what layers

C: yeah

PD: I mean that's one important thing to do...

S, one of the student conservators, and C, the supervising conservator, appeared to be taking PD’s comments as statements of fact. However, he may actually have been searching for other suggestions. Later in the discussion, he presented another opportunity for suggestions:

C: were we saying we were going to try and cover pretty much the whole of that section and see what’s under there?

PD: (...) no I’m not saying that we need to (examine) the whole wall

C: no ok

PD: but I do wonder whether we should have a look over a big enough area like that (...)  

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As the discussion ended, the project director weighed whether or not finding a layer of pigment merited spending that much of the conservator’s time. He suggested bringing in women from the local village who had helped with similar activities in order to speed up the process. The women had been working very effectively in other areas of the site, but the supervising conservator appeared to have doubts about this solution. Nevertheless, she did not challenge the suggestion:

PD: (...) and do you think it's right that (...) you sort of people are the right...people to do this rather than having the women from the village do it?

C: well (...) yeah (...) over in [the other area] they're doing such a great job ...it might be worth bringing them in here

PD: you see 'cuz it's a fairly (...)

C: I mean we were a bit worried we weren't really sure but they were actually really brilliant so

PD: yeah

C: yeah I mean we could definitely (...)

Throughout this interchange, the director appeared to be making suggestions with the expectation that they would be challenged. However, the conservators appeared to interpret his comments as ideas that should not be questioned. This was a difficult dilemma. If they rejected his suggestions, they risked appearing uncooperative and could possibly impede progress. If they accepted his suggestions, they risked implementing a strategy that they knew would be less efficient and potentially more destructive. A brilliant resolution to the dilemma was presented when the supervising conservator suggested that working with the village women might actually be less efficient due to a lack of workspace. The director seemed to agree and, in the end, left the decision up to the conservators while implying that the conservators’ time should not be wasted. Of note is that fact that the conservator chose to suggest a solution to the archaeologist that
represented avoiding harm to the process rather than harm to the object.


An example is an exchange I observed during an international archaeology conference in 2003. The protocol of the hosting organization was to organize sessions by themes. At the end of each session, participants could translate the session’s discussion into draft resolutions for presentation at a final assembly of all members of the organization. If approved by the assembly, the draft would be considered by the governing board as a formal resolution representing the values of the organization. In this way, the organization believed it could influence the decisions of policy makers by presenting a unified voice of expertise and authority.

One conference session theme addressed the need to integrate concepts of conservation with archaeological practice. A draft resolution stressing this need was prepared by session participants (CA) who represented conservators and archaeologists working on preservation issues. Members of the assembly (R1, R2) responded to the draft with reference to issues of authority in two instances. In the first instance, respondents...
criticized the resolution because it appeared to assume that the authority for undertaking conservation projects rested with the “expert” community of archaeologists and conservators.

R1: This is very well meaning but the fact that indigenous (communities) (...) are tacked on to it is there to mean that it’s going to be perceived as (...) very top down and non-participative and I think we need to be asked first before we offer things like this. We need to be driven by communities rather than tell them what we think they need.

R1: I think that the whole framing needs to be (...) a much more inclusive (...) invitations come from those stakeholders of the community first.

In the second instance, respondents called for the resolution to include a more forceful tone that would challenge the authority of decision makers:

CA: [the organization] urges that decision-makers strive for the inclusion of all stakeholder voices in the use, management, and preservation of archaeological places and collections.

R1: Requires (...) requires the decision makers to include stakeholders.

CA: Requires instead of? Yes? (...) decision makers are required.

R1: No. [the organization] requires them not urges. Requires them. Urge doesn’t give a (...) Urges?

R1: Urge isn’t a demand. Requires is a command.

CA: I doubt they would accept that.

R2: Require. ((more adamantly)) Urge isn’t a demand. If you say [the organization] requires them to deal with the indigenous people and the stakeholders and the owners of the site (...) then (...) it forces (...) them to do what they ought to do anyway.

In this exchange, the resolution’s sponsor (the “conservators”) preferred the word “urge” rather than “requires” for fear that strong language would be rejected by the organization’s board. The conservation professionals were also acknowledging the authority of the political world at large, by anticipating that the board would reject
assertive language in a published resolution.

More at issue between the representatives of the disciplines was the authority of the indigenous communities in the preservation process. Both the conservators and the archaeologists (respondents) acknowledged the authority of indigenous communities. However, according to the respondents, the indigenous communities must decide what to preserve and the manner of doing so. Therefore, local knowledge should take precedence over the "expertise" of archaeologists or conservators.

Certainly many archaeologists would disagree with an approach that appears to privilege indigenous knowledge. Nevertheless, the discussion provides another example of the perpetuation of a stereotype that conservators are more interested in objects than in people.

12.2 Uncertainty and the Harm of Procedures and Techniques

In the qualitative results, conservators most often associated procedures and techniques with certainty or uncertainty rather than harm. Indeed, conservators working at archaeological sites encounter various types of uncertainty at each site due to differences in environmental conditions, excavation techniques, and theoretical approaches of the archaeologists. In addition, uncertainties are also introduced when conservators are asked to perform tasks that may be outside of their realm of expertise.

In one instance, I observed the reaction of conservators who had just arrived on site and were presented with an overview of what the archaeologists expected them to accomplish that season. Their expressions betrayed some anxiety, and through their discussion with the archaeologist it became clear that their discomfort resulted from the fact that they had not attempted this specific sort of task before. The risk for the conservators was that their competence would be in question if, through their lack of experience, their methods failed. However, this task was not viewed as a risk to the
archaeologist who assumed that because they were conservators, they would be able to handle any preservation task.

According to some, the expectation that any conservator can perform any conservation task is more commonplace for conservators working in archaeology than in other specialties. At a recent conference, one speaker observed that:

One of the fundamental principles taught to all students in conservation is the rule that one does not work beyond the area of one’s expertise. However in my experience all too often this rule has been applied to all specialties except archaeological conservation (Green 2005).

Working beyond the limits of one’s training is a dangerous circumstance for any professional, and both archaeologists and conservators recognize this in their codes of ethics. Codes of ethics for the American Institute for Conservation (AIC) (Appendix 7.1) state that:

The conservation professional shall practice within the limits of personal competence and education as well as within the limits of the available facilities (AIC 2006).

Almost identical language is used by the Archaeological Section of the Institute of Conservation in the UK (Appendix 7.2):

Conservation and investigation should be undertaken only within the limits of the archaeological conservator’s professional competence and facilities (UKICAS 1990).

Similar statements exist in professional documents of archaeological organizations. For instance the Guidelines of the Society for American Archaeology (Appendix 7.3) state that:

Given the destructive nature of most archaeological investigations, archaeologists must ensure that they have adequate training, experience, facilities, and other support necessary to conduct any program of research they initiate in a manner consistent with the foregoing principles and contemporary standards of professional practice (SAA 1996).

These codes of ethics and guidelines for practice serve as one way to displace the uncertainty of knowledge and skills. However, judging by the specificity of various codes
and guidelines, work setting appears to have a bearing on the significance of this risk.

For instance, organizations representing the interests of academia have written ethical codes and guidelines that are fairly generalized, while those representing those outside of academia are more specific. For instance, until recently, the American Institute of Archaeology’s (AIA) *Code of Professional Standards* stated simply that members should “seek to ensure that the exploration of archaeological sites be conducted according to the highest standards under the direct supervision of qualified personnel” (AIA 1995). The code now includes sections with several paragraphs on responsibilities to the archaeological record, the public, and colleagues (Appendix 7.4) The Society for American Archaeology’s (SAA) *Principles of Practice* includes statements concerning “responsible use of collections” and “adequate training and experience” (SAA 1996). As Rotroff notes (2001, 140 citing Wylie 1996), these documents present ethical ideals or goals rather than a mandate for specific behaviour.

However, more specific statements concerning conduct are presented in the Institute of Field Archaeologist’s *By Laws: Code of Conduct* (IFA 2002) and *Code of Conduct of the Register of Professional Archaeologists* (RPA 1991), (Appendix 7.5 and 7.6), organizations with memberships dominated by archaeologists outside of academia. For example, Principle 4.4 of IFA’s Code states that:

> An archaeologist is responsible for the analysis and publication of data derived from projects under his/her control. While the archaeologist exercises this responsibility he/she shall enjoy consequent rights of primacy. However, failure to prepare or publish the results within 10 years of completion of the fieldwork shall be construed as a waiver of such rights, unless such failure can reasonably be attributed to circumstances beyond the archaeologist’s control (IFA 2002).

As Rotroff notes (2001, 141), the Register of Professional Archaeologist’s (RPA) guidelines “follow the ‘Ten Commandments’ model with each section prefaced by the phrase ‘an archaeologists shall’ or ‘an archaeologist shall not’. For example, paragraphs of the Code state that:
An archaeologist shall... give appropriate credit for work done by others. An archaeologist shall not commit plagiarism in oral or written communication. An archaeologist shall not reveal confidential information unless required by law (RPA 1991).

RPA's *Standards for Research Performance* is even more explicit and includes specific procedures for field survey and excavation including statements about how to document finds and disseminate results.

The AIC's Code of Ethics is similar to those of the archaeological organizations representing professionals outside of academia. Included among the various "shall"s and "must"s is a statement that the "conservation professional shall document examination, scientific investigation, and treatment by creating permanent records and reports". In another example, specific guidelines for sampling and testing are also included which state that:

Prior consent must be obtained from the owner, custodian, or agent before any material is removed from a cultural property. Only the minimum required should be removed, and a record of removal must be made (AIC 2006).

However, organizations representing archaeologists outside of academia are the most explicit of all, noting specific steps to compensate for any perceived lack of expertise. For instance, statements of the RPA include the following:

The archaeologist has a responsibility to prepare adequately for any research project, whether or not in the field. The archaeologist must assess the adequacy of her/his qualifications for the demands of the project, and minimize inadequacies by acquiring additional expertise, by bringing in associates with the needed qualifications, or by modifying the scope of the project (RPA 1991).

The IFA takes this obligation even further, stating that:

It is the archaeologist’s responsibility to inform current or prospective employers or clients of inadequacies in his/her qualifications for any work which may be proposed; he/she may of course seek to minimise such inadequacies by acquiring additional expertise, by seeking the advice or involvement of associates or consultants, or by arranging for modifications of the work involved; similar considerations apply where an archaeologist, during the course of a project, encounters problems which lie beyond his/her competence at that time. It is also the archaeologist’s responsibility to seek adequate support services for any project in which he/she may become
involved, either directly or by way of recommendation (IFA 2002).

Although it may be argued that this level of specificity is essential and appropriate for an accrediting body such as IFA (Corfield 2007), in the US, it may also suggest that archaeologists who work outside of academia may appear, to some, to be "less professional" and therefore require more oversight. This issue has, in fact, been at the heart of the divide between archaeologists in academia and those working in American Cultural Resource Management (CRM)\(^6\), an area of archaeology which, according to some, has been driven by the needs of development. Wilson (2001, 31) summarizes the risk:

By not requiring field technicians to use formal theory and methods, many academicians say that CRM has created a new kind of archeologist, one that essentially lacks the ability to comprehend the impact archaeological work has on the discipline and on the public.

As with archaeologists in American CRM, most archaeological conservators work outside of academia, and therefore may be viewed as technicians rather than scholarly experts. This became explicit during a meeting of archaeologists and conservators on topics involving archaeological conservation. In one presentation an archaeologist presented his strategy for conserving objects. Toward the end of his presentation he summarized his approach:

So a little bit of the philosophy of our lab on conservation is not to be expensive...and you can do a majority of it yourself. Again, only archaeologically recovered artifacts and if you have any question on whether you can do these artifacts or not...network. Find out about these things. Generally if you don't go into the theories behind this...this really isn't rocket science. You don't have to make this difficult. It is really hands-on and labor intensive.

One significant aspect of this archaeologist's narrative is the fact that he distinguished "archaeologically recovered artifacts" as most appropriate for this do-it-yourself approach. He implied that risks to these objects are not as great as risks to works

\(^6\) Corfield (2007) notes that "In the UK there is no division between CRM archaeologists, contracting archaeologists or any other sort of archaeologists, indeed many commercial units are based in universities. Unfortunately few commercial conservation labs are".
of "fine art", simply by virtue of their archaeological context. In his view, these types of objects do not convey enough value to warrant specialized treatment and expertise.

Another interesting aspect of the archaeologist’s narrative is that the audience, a majority of whose members were conservators, did not challenge the statement that “this really isn’t rocket science”, even during a question-and-answer period. Such a statement would seem to challenge the notion of conservation as a profession requiring specialized expertise gained through advanced training and years of experience. Later, I asked one conservator why the archaeologist’s statements were not challenged. She suggested that the audience may have felt that confrontation would only alienate him, and he was, after all, promoting the idea that conservation was important to archaeology. In other words, the idea that archaeological conservation could be a field of expertise might be too tenuous to risk.17

Nevertheless, that the speaker challenged the expertise of his audience was significant. He could have been confused about the background of his audience, or he could have simply been borrowing from a lecture to students and other interested non-professional archaeologists. Nevertheless, his comments also represented his belief that archaeological conservation should be considered another archaeological technique, rather than part of a separate and specialized discipline. He makes this clear elsewhere in his presentation:

My great fear in this respect is that archaeological conservation and I’m speaking of archaeological conservation not...artistic conservation or artwork conservation or anything like this...my fear is that archaeological conservation become[s] nothing more than a specialty an entity outside of archaeology. Should this happen or I should say continue to happen...archaeologists and conservators will continue to be at odds with each other [and] collections will continue to languish without stabilization at virtually every archaeology lab in the country.

17 An interesting and somewhat heated debate about the same archaeologist’s book on conservation materialized on a discussion list in 2008. Discussants noted that although the book had been published in 2004, a review had not yet been written by a conservator. Most agreed that a review should be published, ideally for submission to an archaeological journal. However, some suggested caution since the author and his views had already gained wide acceptance in a segment of the US archaeological community.
Whether or not most archaeologists view conservators “simply as technicians” remains to be explored. Nevertheless, one conservator I interviewed firmly believed this to be the predominant view. In a narrative, he described the reaction of his archaeological peers in graduate school when he announced that he was pursuing a career in conservation rather than archaeology. Their reaction was to ask why he would be interested in such “ephemera”.

As discussed in earlier chapters, the divide between “technicians” and “academics” in archaeology has been a subject of much discussion over the last few years. In a study of cultural resource management in the US, Michele Wilson (2001) found that field technicians’ responsibilities primarily involved manual labour and rarely included “higher status” activities such as interpretation. She cites a view within the archaeological academy that the “primary expectation of field technicians is to facilitate the removal of spoil and to cull artefacts, an activity that requires little to no incorporation of theory and methods” (Wilson 2001, 31 citing Ross 1997).

Archaeological conservators may contribute to the perception that they are “merely” technicians if they fail to make their expertise clear. My interviews and observations suggest that, even in circumstances where conservators have had a long-term involvement on a project, archaeologists were not aware that specialized expertise may be required for a conservation task.

In one instance, an archaeologist expressed her appreciation for the fact that the conservation team was willing to help lift fragile bone objects in situ. Apparently, conservators she had worked with in the past had appeared less enthusiastic about helping with these objects. She interpreted this response as a lack of interest, almost as if “the task was beneath them”. However, in a follow up conversation it became clear that the hesitation she sensed may have had more to do with the fact that the other conservators were specialists with building materials, not archaeological objects.
On another occasion, an archaeologist entered the conservation lab announcing that she wanted "to know the composition of this material". One of the conservators followed the archaeologist to her lab, and when she returned, appeared distressed that she had been asked to perform this task. This archaeologist, who may not have worked with conservators before, appeared to assume that all conservators have expertise with the analysis of any material.

In both scenarios, the conservators may have assumed that their area of expertise was clear, and any effort to draw distinct limits would raise questions about their competence. Certainly, fears of appearing less than fully rounded are legitimate, yet establishing the boundaries of one's expertise is precisely how disciplines are defined, and how experts establish "jurisdiction" (Abbot 1988). Henderson and Dollery (2000) point out another consideration:

The public expect that if they approach a professional they will be properly advised, even if the advice is to go to another member of the same profession. The title "Doctor" is not diminished by the fact that no doctor is qualified to work on every condition. Instead the title "Doctor" is widely recognized and respected (Henderson and Dollery 2000, 89).

Establishing the boundaries of expertise also delineates responsibility. For example, at a recent conservation conference, several archaeologists began their presentations with the statement, "I am not a conservator". In one sense they were making it clear that any inaccurate statements they might make regarding conservation should be acceptable. But they were also staking claim to the identity of their own profession, and emphasizing that they had something to say that was unique and important.

Archaeological conservators are presented with a difficult dilemma. They are bound by a code of ethics not to practice beyond their level of expertise. However, they are often the only conservator on site and therefore may need to present themselves as competent to work with a wide range of objects rather than only with specialized materials. According to Green (2005), some conservators prefer training that provides a
broad general background rather than a specialized program in archaeological
conservation. One benefit of this identity is that it provides more opportunities for
employment. In a recent informal survey, archaeological conservators in private practice
stated that most “have to work on a variety of [non-archaeological] objects in order to
make a living” (Peachy 2005).

Uncertainties involving procedures and techniques and the skills to apply them are
displaced in part by establishing a mechanism to assure levels of competence.
Accreditation schemes have been discussed by archaeologists working outside of
academia, and it has also been an important issue for conservators as well. Although still
a topic of much debate, the AIC is currently engaged in a project to develop a
conservation credential (Drayman-Weisser 2006). An accreditation program operated by
the Canadian Association of Professional Conservators (CAPC) has been in place since
1971 (Colby-Stothart et al. 1996). In the UK, a Professional Accreditation of
Conservator-Restorers (PACR) scheme has already been implemented which is managed
by the Institute of Conservation (ICON) and is consistent with standards set by the
European Confederation of Conservator-Restorers’ Organisations (E.C.C.O.). In addition,
registries of conservation professionals maintained by AIC and ICON serve in part to
direct members of the public to consultants based on areas of expertise.

The uncertainty of procedures and techniques are also displaced when
opportunities to gain education, training, and experience or to keep current with new
developments in the field are available. This is a particular issue for archaeological
conservators in the US since, until recently, conservation programs offered specializations
in objects conservation but not necessarily the conservation of archaeological objects.
Supervised internships in the field are even less likely, if existing at all (Green 2005), and
although increasing in number, few post-doctoral research positions are available. The
latter is perhaps a reflection of the fact that the National Science Foundation (NSF), one
of the major sources of federal funding in the US, awarded its first grant to a conservation researcher in the late 1990s, and to the recipient’s knowledge, few NSF grants in conservation science have been awarded since (Trentleman 2006).

Ashley-Smith suggests that skill gained through experience “is what reduces the uncertainty in outcome” (2001, 61). He also notes that skill must be “supplemented by a variety of other sources of information” including anecdotes of personal experience and discussion (2000, 15). An example of one such vehicle for sharing knowledge is the Internet discussion list, ConsDistList, hosted by Walter Henry at Stanford University. In operation since 1985, this list regularly posts messages requesting information about the nature of a particular material, ideas about how to approach a specific problem, where to get certain materials, or the experiences of other conservators working with a specific material or on a specific substrate. Another discussion list, Conservation-Research, is administered by Adrian Tribe based in the UK. The stated purpose of the list is to “enable discussion amongst those engaged or interested in research into the conservation of objects, works of art or buildings, encouraging the sharing of ideas and experiences, and the exchange of views on the development of national & international conservation research aims” (CoOL 2007).

I observed this tradition of shared experience in action with conservators at an archaeological site who were asked to undertake a somewhat overwhelming and unfamiliar task. In this instance, the conservators were able to displace potential risks by discussing ideas over the phone with a conservator from the previous season. Although access to the Internet and mobile phones makes shared experience more feasible, the isolated nature of archaeological sites may make this a particular challenge for many conservators.
Another way to displace the uncertainty of knowledge and skills is by changing perceptions about the nature of the outcome of procedures and techniques. Ashley-Smith suggests "embracing uncertainty" and accepting "low but finite probabilities of damage (something that happens in practice but is rarely acknowledged) then the policy of ‘survival of the least fit’ can be exchanged for something less constraining" (Ashley-Smith 2000, 17). The research suggests that this goal may be difficult for some conservators to achieve.

12.3 Responses to Interpretations of the Analytical Results

Discussion of these results with some of the participants as well as other conservators provided a test, to some degree, for the validity of my interpretive claims. As a consequence of the discussion, the conservators provided new narratives. For instance, in response to my statements about the significance of interpretation as a trading zone, one conservator offered the following commentary:

You said something really interesting which I think is totally true, you sort of hit the nail on the head that one of the places where...this kind of liminal space... between those two fields... where they really could assist one another, really is in that interpretation and presentation... Because the conservator can say, “ok, well this is what I'm seeing of this...eleventh century wall or this painted plaster and... I would like to stabilize it this way or use new stones this way... and in talking to the archaeologists and saying, “but what do you really know about the different periods of occupation? Are these stones I'm seeing here from this period of occupation or are they this period of occupation?” So when we... decide to conserve this wall or stabilize this wall, do we know, [did] this period of occupation [come] this far, or did it actually stop way back there? Therefore, what I put here should really respond to X period... and what goes there should respond to [Y] period of occupation... but they could actually inform one another...

With regard to issues of uncertainty, the same conservator provided these comments:

Do I think that conservators are less comfortable [than archaeologists] with the notion of uncertainty?... There probably is some accuracy to that... it’s true that conservators are there... to protect against... deterioration and damage and destruction and so they're always trying to ward off risk. That part's true, and... if you associate uncertainty with risk (...) then
yes...If you talk about uncertainty in terms of interpretation (...) I can only speak for myself in this, and...at least in the abstract, I'm not so uncomfortable with that...If the uncertainty has to do with...threat to the material...then I would agree that we're very uncomfortable...

...I can't speak as an informed archaeologist but...it seems to me that so much of archaeology, well like you say, [involves] discovery and uncovering, but then it's also about interpretation and...similar to art history...you're trying to make sense of a picture and you're speculating, and the more...factual information you have the less speculative it feels, the more...confirming your interpretation is...I do feel that conservation...really is a kind of interpretive act because any time you touch it you're interpreting it...sometimes maybe you have a lot more information than an archaeologist does because you have the whole building, and the stone is actually flaking, so its just a matter of trying to retard that flaking process...but when...you have fragments of something, and you're trying to make sense of the fragments...then obviously you have to be a lot more comfortable with the...unknown, the uncertain (...) in terms of, "what's this story?" and "how do I help convey what this story is?"

A discussion with another conservator regarding the impact of field work on conservation practice inspired a narrative about a recent experience. The conservator had been called to the field by an archaeologist requesting help with the recovery of a painted textile fragment. After the conservator's work was complete, the archaeologist, a textile specialist, commented that she would never have been able to accomplish what the conservator had done, nor would she have thought to use such procedures. This response surprised the conservator, who assumed that the strategies she used were common practice for archaeologists.

The conservator also noted that seeing the object in context enabled her to interpret aspects of the weave and paint that would not have been possible once the object was removed to the lab. In her estimation, the interpretive experience in the lab would have been completely different. The conservator also noted that the textile was eventually reburied, making these opportunities for analysis even more significant. Notably, the archaeologist is requesting permission from the tribe to publish the conservator's findings.
Another conservator commented on the difficulties of working with objects which are out of context, and without access to documentation as an aid to the interpretive process:

You perform a sort of detective study ... You look for traces of wear, you look for traces of dirt and damage, and you try to establish ... something about how this object is used ... so even though you get the object out of context at least in my experience, I've always wanted to reconstruct where it came from and what it meant, and not having access to that information where it was found, how it was found, and what relation to other objects that were found, you know ... there's so much information missing ... so you can only deal with what's on the object itself ... that's really frustrating.

She continued with examples of circumstances which made contributing to interpretation difficult or impossible.

I was working for [an organization] were archaeological textile fragments ... came from the Middle East ... and no record ever came with these textiles to us. We worked on the textiles [that were] from ... a very impressive archaeological site where there was a lot of documentation ... I can imagine, I've never seen it, and ... they were preparing these objects for an exhibition in [a museum]. And that was the reason to preserve the textiles actually, to make them look better. That was to me what they were trying to do. It wasn't really trying to preserve the textiles, or get more information from it. Basically, we were handed these boxes of textiles and ... although they didn't say it, the message was, "can you make these look slightly more presentable?" ... and that's what we did. But it felt ... wrong at the time. I wasn't the project manager. I only worked on a few of them, but it was just removing all the dust and all the dirt, and I just felt wrong about that. I just didn't like that at all, because you know you're removing part of the history of that object for that fragment.

... and the other ... set of fragments I worked on was actually my project so I had a lot more control with what I wanted to do with that. And that was an amazing textile find from [a Middle Eastern country]. But ... there was no record whatsoever where these were found. They were found in caves but we don't know where, we don't know how, we don't know anything ... so you're given these wonderful textile pieces that have so much to tell you, but without ... that rudimentary base knowledge, you're sort of presuming things ... and we did carbon dating and all sorts of analytical techniques to understand them a little bit better.

Other comments involved perceptions of professional practice:

There seems to be a system in place that conservators and archaeologists don't work together from my experience. Probably the most important reason is funding, but then there is also this ... not necessarily disrespect, that's too harsh, but sort of a disrespect of each other's qualities and expertise.
...a few textile archaeologists, and that, I guess, is a specialty itself...are very very convinced of their own...qualities, so they would also do the conservation because they felt that conservation of the archaeological textile was so much more towards the archaeology side, it justified them doing it rather than asking a conservator to come in and help...I think there's almost a belief, “well let’s document it while...we’re seeing it. It will probably be lost”, or “we’ll bury it because we can't keep it”.

The conservator also confirmed the challenges of understanding issues of common interest which could facilitate knowledge exchange:

I know that the textile committee in [one country] organized this day symposium on archaeological textiles. And they had a hard time getting the archaeologists to come to this meeting even though it was very cheap...it was almost like [the archaeologists] didn't feel the need...for interacting with conservators.

12.4 Summary and Conclusions

Interpretation, as a fundamental activity of archaeology, may be the predominant object of risk, and therefore of significance, for this discipline. For the archaeologists, interpretation is an ongoing process that begins, according to Hodder (2007), “at the trowel’s edge” and continues through the various spaces, places, and times in which archaeology is practiced. For archaeologists, the primary risks of interpretation may involve challenges by others who differ in theoretical approach or who uncover new or contradictory evidence. As a consequence, they must accept the dangers and uncertainty of the interpretive process. Uncertainty, in fact, may be archaeology’s appeal since it is so closely associated in public and professional perception with the concept of discovery (Edgeworth 1991, Longford 2004, Woodall and Perricone 1981).

As we have seen, interpretation and discovery are also essential aspects of conservation. However, the research suggests that issues of time and place, as well as perceptions of authority, have created boundaries that are deeply embedded in conservation and archaeological practice. To some extent, this circumstance can be explained as a historical legacy of the development of the professions. While the practice
of archaeology moved from the museum into academia, archaeological conservation remained within the world of museums, associated with the work of “technicians” and caretakers. Views of the conservator as technician may be a particularly troublesome barrier between the disciplines since, as illustrated in debates concerning archaeological practice, the technician is often excluded from the interpretive process.

However, the divide is also perpetuated by the archaeological conservators themselves, in some instances out of necessity. Presenting themselves as experts with specialized knowledge may limit their chances for employment. Yet, if they do not present themselves as experts, they risk acceptance as a team member with equal authority. Always at issue is the concern that they will violate their ethical code and cross the boundaries of their expertise.

One way out of this dilemma will be to broaden conservation expertise by recognizing the trading zones of shared experience not only within the discipline, but also outside of it. As Guntau and Laitko observe:

A discipline is...a self-reproducing system as a whole, whose inner reproduction selectively takes up material and ideal resources (e.g., knowledge and methods from other disciplines) and adapts them for that specific discipline (Guntau and Laitko 1991, 21).

To some extent, borrowing and adapting techniques and ideas from other disciplines is already recognized as a fundamental process for conservation. However, as I summarize in the final chapter, the research suggests that for archaeological conservators, the process has not yet reached its full potential.
Chapter 13 — Summary and Conclusion: Practice within the Trading Zones

Perhaps a summary of this research is best begun by borrowing from an archaeologist’s statement about a new program in archaeological conservation at his university. In response to a discussion of the program’s objectives, he asked, “what are we creating, conservators who are archaeologists, or archaeologists who are conservators”? That he asks such a question reminds us how important these disciplinary boundaries remain.

We have seen that historical legacies from the development of both fields have contributed to the creation of boundaries between the disciplines. Although both are rooted in antiquarianism, with the rise of the universities, archaeology aligned more closely with academia and traditions of the social sciences. The research indicates that one of the manifestations of this alignment was an emphasis on broader interpretations of material culture, human behaviour, and culture change. Meanwhile, the field of conservation remained associated with a focus on caretaking and research in the material and environmental sciences. This divide between archaeology and conservation has often been bridged through common interests in the specific characteristics of objects and materials.

However, theoretical, social, and political turns in archaeology and conservation have caused disciplinary identities to shift in recent years. Both archaeologists and conservators are now trained to approach the practice of their discipline with much broader notions of their roles in the study and preservation of material culture than they have in the past. Professionals from both fields can no longer view themselves and their work in isolation from the interests of other communities of stakeholders, and must expect to work in collaboration with various specialists and non-specialists alike.

Moreover archaeologists, at least in the US, now find themselves employed in
cultural resource management more often than as academics, and most conservators in the US are now in private practice rather than on staff in museums. Meanwhile, institutions preparing new entrants to these fields find it difficult to keep pace with the expanded skill set now required for the modern workplace.

Such changes in practice imply an increasing need for tools to help expand the scope of knowledge required to address complex problems, while still maintaining the disciplinary identities necessary to operate within the social world. In a sense, we are hoping to create trading zones of knowledge. A useful way of thinking of the creation of these zones is through the concept of “boundary objects”. As defined by Star and Griesemer:

Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual-site use. These objects may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds (Star and Griesemer 1989, 393).

13.1 Boundaries, Boundary Objects, and Trading Zones

The mechanisms involved in the production of new knowledge have been a subject of great importance and debate in archaeology since its beginnings as a discipline (Wylie 1996). Over the past several years, the privileged nature of this process has become a particular area of focus during discussion of archaeological practice. Scholars have noted the importance of multiple voices in the interpretive process, including those with specialist roles within their own profession. In the latter case, Jones (2002) has described the impact of analysis separated by time and place as “de-contextualization”, and has identified potential zones of contact between specialists (Figure 13.1.1).

Notably, these zones for potential contact appear well after the excavation is
complete during preparation for the final excavation report. Traditionally, a similar scenario exists for contributions from conservators, if they are included in site interpretation at all.

**Figure 13.1.1** The de-contextualized nature of archaeology (Source: Jones 2002, 43)

The research has shown that with the archaeological excavation itself as a boundary object, conservation becomes “contextualized” at the moment of discovery as well as later in the process of interpretation (Figure 13.1.2).

**Figure 13.1.2** Contextualized archaeological conservation
As conservators work side by side with archaeologists in the trenches, trading zones are created that produce new knowledge about objects and the site, and at the same moment shape the identities of conservators and archaeologists through shared experience and expertise.

In earlier chapters, I presented two scenarios from my observations as specific examples of the process involving boundary objects. In Chapter 6, we saw how the decision of the project director to preserve an object in situ invoked a prolonged discussion between the conservators and the supervising archaeologists. During the ensuing give-and-take exchange, a body of new knowledge was created about the current and projected conditions at the site and the likelihood that the object could remain viable for its intended purpose—interpretation. As the archaeologists presented their suggestions based on knowledge of the nature of the soil and seasonal variations in the environment, the conservators presented recommendations based on their knowledge of the characteristics of available materials, the object, and the processes of deterioration. The result was a solution based on the combined knowledge and experience of the conservators and the archaeologists (Figure 13.1.3).

![Diagram](Figure 13.1.3) Boundary objects within the trading zones of in situ preservation
In Chapter 12, we discussed a conservator’s investigation of a painted plaster surface on an excavated wall and her preparation of a “plan” for the archaeological record. Through the process of measuring and drawing the wall painting remnant on graph paper, it was documented for the archaeologists and also examined in greater detail through the perspective of a conservator. Perhaps most importantly, the conservator’s observations were immediately incorporated into the site documentation. An additional consideration was that, although documentation is standard practice, the conservator had never had an opportunity to use this particular technique in the trenches, and later commented on how much more she was able to “see”. As a consequence, the conservator gained another skill which she may apply in other contexts (Figure 13.1.4).

**Figure 13.1.4** Boundary objects within the trading zones of studies on painted plasters

In both scenarios, the knowledge produced not only concerned processes and materials, it also involved interpretation. Because the conservators were working side by side with the archaeologists at the moment of discovery, the site’s interpretative value was changed. However, another consequence was a change in each discipline’s knowledge of the other. In the first scenario, the archaeologists learned about the complexity of the decision-making process in conservation practice. Meanwhile, the
conservators learned, or perhaps were reminded, of the essential connection between the excavator, the object, and the beginning of the interpretive process. In other words, progress was made toward epistemic trust.

The quantitative results show the existence of other boundaries and potential trading zones. For instance, we saw that the risk concept “concern” was used more often in discussion between archaeologists and conservators than among archaeologists themselves. This suggests that the conservators were introducing issues of harm which the archaeologists may not otherwise consider. In another instance, we saw that the archaeologists talked more about “probabilities” with conservators than with other archaeologists. One interpretation of this circumstance is that, consciously or not, the archaeologists saw a need to interject issues of certainty or uncertainty to the conservators.

We also saw evidence for the fact that outside of the trenches, archaeological conservators are using conferences as trading zones and conference papers as boundary objects. Conservators organized separate conservation sessions at archaeological conferences, and papers from some of these sessions appeared in publications targeted at audiences from both disciplines (Agnew and Bridgland 2006). Conservators also presented papers at archaeological conferences during sessions on archaeological topics. However, conservators appeared to have been most successful at creating interest within the archaeological community when their papers were integrated within archaeological sessions, rather than when they were presented during separate conferences or separate conservation sessions within the same archaeological conference.

Although conservators also strive to publish in the peer-reviewed journals of other disciplines (Pouliot 2005), this may be a particular challenge. Such an endeavour involves learning the metadiscourse (Hyland 1998) of another profession. That is, authors must understand how the other discipline “justifies” their beliefs socially, as well as how
knowledge is established and maintained" (Chaopricha 1997, 1). As this research shows, each discipline has different literary conventions, and the boundaries created by these conventions may be fortified by deeply embedded assumptions. In interviews an archaeologist stated that, “I would never read the conservation literature and I presume that conservators would never read mine”, while a conservator observed that jargon in archaeological reports was so impenetrable that she found them impossible to read, let alone understand.

Given these issues, co-authorships would seem a particularly useful boundary object since they can be a mechanism for “inculcating” scholars “into the membership of a science discourse community” through planning, drafting, and revising (Florence and Yore 2004, 638). However, as scholars have noted (Meadows 1974) the practice of some disciplines is more likely to facilitate co-authorships than others. As the research indicates, sole authorship appears to be a deeply embedded value among archaeologists in the US.

We also saw that specific tasks can become boundaries or boundary objects. Chapter 6 provided an example of such a scenario when conservators were asked to recover a large wood sample for dendrochronological analysis. This type of sampling was an activity that the archaeologists usually performed, and the conservators could have declined to undertake it. However, they used this task as an opportunity to demonstrate how to recover larger samples, while at the same time making clear that they were cognizant of the potential harm consolidants can have on the analytical process.

Perhaps the most obvious boundary object to consider is the “archaeological record” itself. If, as Tilley states, “all archaeology is an interpretative activity” (1989, 277), and interpretation follows from that which is valued enough to ensure its survival, the archaeological record can be changed by the archaeologist’s knowledge of conservation practice. We saw evidence of this circumstance in Chapter 7, where
archaeologists disregarded small pieces of metal because they assumed these objects would deteriorate during the time it took to get them from the trenches to the lab. However, the conservator’s trench-side experiment with inexpensive plastic containers and a buffering agent provided visual evidence that with little effort and expense, these objects could survive. As a consequence, the objects may now be included in the site’s artefact inventory.

“Atrocity stories” are legion in the narratives of archaeologists and conservators who tell of objects crumbling on contact or destroyed in transit, and of entire sites that were demolished by heavy equipment. One can only speculate on the impact such events have on the “archaeological record”.

However, on the other end of the spectrum, we have seen that both archaeologists and conservators must accept the possibility that an object’s value may exist in removing it from the archaeological record when the values of other stakeholders take precedence. Indeed, as documented in discussion during interaction between archaeologists and conservators at conferences and during interviews, work with indigenous communities may be one of the most promising areas of collaboration between the disciplines in the US. For instance, the experience conservators gain while consulting with descendant communities on acceptable strategies for storage, treatments, and analysis can contribute, where appropriate, to the archaeologist’s understanding of the object’s cultural affinity and meaning.

Perhaps the most significant boundary and potential trading zone is the formal training process through which each discipline’s distinctive knowledge, skills, and abilities are gained. Although increasing in numbers, and more common in historic and underwater archaeology, few American universities offer conservation courses to archaeology students or archaeology courses to conservation students. A circumstance of even more significance, given the results of this research, is that few opportunities exist
for supervised training of archaeologists and conservators together on site. Longford describes the following scenario:

In the archaeological conservation coursework I received, the issues of field conservation were never strictly addressed nor was the role of an archaeological conservator in the field engaged in decision making alongside the field or crew chief. Critical emphasis in the classroom had been placed on understanding the composition of materials...Stabilization treatments were also assigned...and were carried out in relative isolation from the field environment” (Longford 2004, 151).


In the US, there has been a recent proliferation of preservation programs that target topics of interest to archaeologists and, in many ways, already make use of the boundary objects just described. The research suggests that the extent to which American conservators become involved in these programs may determine whether archaeological conservation in the US grows in professional status within the field of conservation, or becomes subsumed within archaeology as a technical specialty.

13.2 Limitations of the Research

These conclusions must be considered the first exploratory step toward an understanding of the boundaries between these communities because of several limitations. Perhaps one of the most obvious is the small sample of conservators, archaeologists, and literature represented. Due to constraints of time and resources, only three archaeological sites were visited for relatively short periods of time. In addition, only two peer-reviewed journals from each discipline for one publication year
were analyzed. As we have seen, a wide range of theoretical approaches exist in archaeology, and similar theoretical approaches may be implemented very differently by archaeologists in different countries, or archaeologists who are working within different social and political contexts. Similarly, the practice of conservation varies with different theoretical approaches, different settings, and within different economic, social, and political environments. In addition to these factors, each archaeological project, site, and object is unique.

Another consideration is that, although my research addresses issues in American archaeological conservation, most of the data collected were from observations at archaeological projects outside the US. In addition, many of the American participants were trained outside the US. In essence, this was a reflection of the issues the research addressed – the underlying historical, social, political, and cultural issues within these “communities of practice” that has created barriers to interaction in the US.

In some ways, the nature of participant observation could also be viewed as a limitation. The method is intrusive, and archaeologists and conservators willing to work with a researcher using this approach may be atypical. Also, an assumption of the method is that the very nature of the activities under study will be changed by the presence of the researcher. This may particularly be the case when audio and video equipment are components of the process.

Methodology is also a limitation in the quantitative analysis. I chose to view the data through a lens of risk, since this was a concept of significance to conservators. The choice of a different concept, perhaps one of significance to archaeologists, could have resulted in different conclusions. Similarly, the “risk concepts” I developed for the coding scheme were aggregates of terms drawn from risk literature. A selection of different terms, or assigning them to different categories, could have produced different results.
The reader must also bear in mind that, although I attempted to spend as much time observing the activities of the archaeologists as of the conservators, this was not always possible due to the unpredictable nature of activities on site. In addition, a majority of observations and interviews involved females, and it has been argued that workplace practice differs between genders (Barinaga 1993, Bodenhom 1993, Conkey and Tringham 1996, Costin 1996, Fedigan 1994, Gero 1996, Holmes and Mara 2004, Hutson 2002, Keller 1995, McElhinny et al. 2003).

13.3 Recommendations for Future Research

The exploratory nature of this research becomes clear with these limitations in mind. However, the limitations also alert us to several avenues for further research. One potential research activity would be to present the results of these findings to archaeologists and conservators for feedback and discussion. Although this strategy was incorporated to some degree in this research, a more systematic approach with a more representative sample size could serve to support or refute the results. Will archaeologists reject the suggestion that they are more concerned with general harms to interpretation of the “archaeological record” than with specific harms to objects and sites? Are conservators, as Ashley-Smith and this research suggests, “uncomfortable with uncertainty”? Does workplace setting or area of specialization change these boundaries, and if so, in what ways?

Another focus of future research could contribute to scholarship in interdisciplinarity (Bauer 1990, Kranakis 1992, Klein 1998, Nissani 1997, Salter and Hearn 1996) by involving tests of specific boundary objects for effectiveness in producing new knowledge. For instance, do activities involving documentation, co-authoring, or specific methods and materials change what archaeologists know about conservation or what conservators know about archaeology? If so, how does this
change occur?

There is also potential for future research which would contribute to gender studies. For instance, researchers have found that the ratio of women to men in the sciences is disproportionate to the number of papers women publish (Barinaga 1993, Hutson 2002, McElhinny et al. 2003). The research presented in this thesis suggests that this trend is also found in conservation and archaeology. Does this data support theories that women are less likely to promote their careers through publication (DiTomaso et al. 1993)? Recent surveys of American conservators also indicate that a majority of the members of this community are female. Research into this phenomenon could contribute to scholarship that strives to explain the predominance of women in some fields of science in contrast to others (Doing 2004, Fedigan 1994, Keller 1995, Rossiter 1982 and 1995).

13.4 Conclusion

The aim of the research has been to identify boundaries between archaeological and conservation practice that may constrain collaboration, and I have discussed several social and individual mechanisms that contribute to the creation of these boundaries. However, the research has also identified trading zones for the exchange and production of new knowledge during joint activities, and has presented examples of specific tools for facilitating this exchange.

What is clear from this research is how much more each discipline needs to learn about the other. Members of both professions often fail to consider how specialized each discipline has become and the impact this may have on expectations when conservators and archaeologists do work together. Archaeologists appear to assume that conservators are expert in all areas of preservation (and conservators, out of necessity, may contribute to this perception). Meanwhile, archaeological conservators may not have an opportunity
to learn how different conservation in the field can be from conservation in the lab.

The research shows that one of the major divides and potential trading zones between the professions involves interpretation. However, for this divide to be crossed and trading zones to proliferate, archaeological conservation in the US must begin to orient itself much more towards the field. It is within the context of the field that interpretation begins, and it is in the field, I would argue, that an expanded skill set is required. These skills must be fluid and adaptable enough to accommodate an extremely rapid pace, the ever changing goals and priorities of excavation, and the different theoretical approaches and personal style of each project director and team. Yet these skills must also be strong enough to maintain an identity of expertise and an assumed role as team member. Architectural conservators who work on archaeological sites, may already be well on this path, but the research suggests that challenges remain for objects conservators in the US, particularly those working in terrestrial, pre-colonial archaeology.

Nevertheless, the time is right to make progress. Funding for archaeological field schools through universities in the US is increasingly scarce, and archaeologists now receive most training on the job. Most employment opportunities involve cultural resource management organizations, who may be motivated to provide professional development training for staff. An opportunity exists for members of the conservation community to use this training gap as a premise to forge partnerships, find funds, and train students from both disciplines on site where working in context will shape understandings about the practice of both disciplines.

In conclusion, let us consider what we are creating. Perhaps we are creating “no single thing...boundaries are ambiguous, flexible, historically changing” (Gieryn 1983, 792). The challenge for archaeological conservators is to learn how to recognize and negotiate the zones of ambiguity and opportunity. I argue that a better understanding of the differences and similarities in the professional practices of both disciplines will help
this to happen, and that working together in context is essential. If the research I have presented in this thesis facilitates this process, it will be due in no small measure to those who generously allowed me a view of their social worlds.


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Appendices
Appendix 1 — Transcription Conventions

Following Knorr Centina (1999) I have simplified traditional conventions established by Sacks, Schegloff and Jefferson.

... ellipses indicate omitted words.

(…) ellipses within single parentheses are pauses.

(((…))) ellipses within double parentheses indicate inaudible or unclear utterances.

((italic text)) words within double parentheses and in italics are my comments or a description of non verbal activity.

:: a double colon indicates a drawn out syllable.

_ underlined text indicates emphasis.

[ ] text in brackets indicates replacement text to clarify a statement or protect confidentiality.

### Appendix 2 — Education and Training Needs Identified by Professional Development Retreat Participants (Source: GCI and AIC 2002, 16)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Material Science</td>
<td>Preventive conservation</td>
<td>Computer applications for conservation (tools, documentation)</td>
</tr>
<tr>
<td></td>
<td>Mechanical &amp; Chemical</td>
<td>management</td>
<td>Documentation imaging methodologies</td>
</tr>
<tr>
<td></td>
<td>Properties/Deterioration</td>
<td>investigation/</td>
<td>Knowledge of standards</td>
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<tr>
<td></td>
<td>Adhesives</td>
<td>assessments/surveys</td>
<td>Mastering digital imaging</td>
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<tr>
<td></td>
<td>Solvents</td>
<td>Risk assessment and</td>
<td>GIS (geographical information systems)</td>
</tr>
<tr>
<td></td>
<td>Coating Sciences</td>
<td>management</td>
<td>Computer application software training</td>
</tr>
<tr>
<td></td>
<td>History of Technology</td>
<td>Emergency</td>
<td></td>
</tr>
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<td></td>
<td>Specific Materials</td>
<td>preparedness response</td>
<td></td>
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<td></td>
<td>Paper, Wood, Stone, etc.</td>
<td>recovery</td>
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<td>Emerging tech materials</td>
<td>Security</td>
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<tr>
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<td>Plastic/ synthetics</td>
<td>Building-related issues</td>
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<td></td>
<td>Electronic media</td>
<td>Master plans (CMP)</td>
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<td>Composite materials</td>
<td>Environmental control —</td>
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<td></td>
<td>Magnetic media</td>
<td>light, RH, temp</td>
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<td></td>
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<td>pollutants</td>
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<td>Evaluation</td>
<td>Integrated pest</td>
<td></td>
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<tr>
<td></td>
<td>Post-treatment evaluation</td>
<td>management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(short and long term)</td>
<td>Packing/shipping</td>
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<td></td>
<td>Re-evaluating treatment</td>
<td>Bioconservation/</td>
<td></td>
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<td></td>
<td>methods and materials</td>
<td>using new approaches</td>
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<td>Loss compensation</td>
<td>Exhibits</td>
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<td>comparative approaches</td>
<td>Storage</td>
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<td>Building blocks</td>
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<td></td>
<td></td>
<td>environment</td>
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<td>Critical thinking/problem solving</td>
<td>Management Skills</td>
<td>Managing up and down</td>
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<td>Information literacy</td>
<td>Negotiating skills</td>
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<td>Connoisseurship</td>
<td>Arbitration team</td>
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<td>Aesthetics</td>
<td>Building, conflict</td>
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<td>Interdisciplinarity</td>
<td>resolution</td>
<td></td>
<td></td>
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<td>Scientific method</td>
<td>Interpersonal skills</td>
<td></td>
<td></td>
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<tr>
<td>Research design skills</td>
<td>Publishing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and Safety</td>
<td>Preparing professional publications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Protection</td>
<td>Preparing popular publications (schools/public audiences)</td>
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<td></td>
</tr>
<tr>
<td>Handling toxic substances and objects</td>
<td>Communicating with Professionals with allied professionals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ergonomics, personal injury prevention</td>
<td>With conservation community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and safety in disasters</td>
<td>Presentation skills</td>
<td></td>
<td></td>
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<tr>
<td>Biohazards</td>
<td>Advocacy</td>
<td></td>
<td></td>
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<tr>
<td>New technologies for personal protection</td>
<td>Mechanics of marketing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and Safety</td>
<td>Community values</td>
<td></td>
<td></td>
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<tr>
<td>Legal issues, OSHA, EPA codes</td>
<td>Stakeholder</td>
<td></td>
<td></td>
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<tr>
<td>Legal issues, NAGPRA</td>
<td>Related</td>
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<tr>
<td>Conservation Practice</td>
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##Appendix 3 — Feilden’s Skills Comparison for Preservation Professionals
(Source: Feilden 1999, 9)

<table>
<thead>
<tr>
<th>Professional Tasks</th>
<th>Conservation Officer</th>
<th>Conservator</th>
<th>Architect</th>
<th>Art Historian or Architectural Historian</th>
<th>Archaeologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read a monument and identify its emotional, cultural and use significance</td>
<td></td>
<td></td>
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<tr>
<td>Understand the history and technology of a monument or site in order to define identity, plan and interpretation</td>
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<tr>
<td>Understand the setting, contents, and surroundings in relation to other buildings, gardens, landscapes</td>
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<tr>
<td>Find and absorb all available sources of information</td>
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<tr>
<td>Understand and analyze the behavior of monuments as complex systems</td>
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<tr>
<td>Inspect and make reports understandable to non-specialists, illustrated with graphs, sketches and photography</td>
<td></td>
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<tr>
<td>Know, understand, and apply Unesco conventions, ICOMOS and other recognized charters, regulations and guidelines</td>
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<tr>
<td>Make balanced judgments based on shared ethical principles, accept responsibility for long-term welfare</td>
<td></td>
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<tr>
<td>Recognize need to seek advice and “define areas of need of study by different specialists, e.g. wall paintings, sculpture and objects of artistic and historical value, and/or studies of materials and systems”</td>
<td></td>
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<tr>
<td>Give expert advice on maintenance, management, and policy for environmental protection and preservation</td>
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<tr>
<td>Document and make this accessible</td>
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<tr>
<td>Work in multi-disciplinary groups “using sound methods”</td>
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<tr>
<td>Work with inhabitants, administrators, planners to resolve conflict and develop strategies</td>
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</tbody>
</table>
Appendix 4 — Essential Competencies Identified by the Society of American Archaeology Committee on Curriculum (Source: SAA 2004)

Principles of curriculum reform and proposed topics:

1) Stewardship

The archaeology curriculum fosters stewardship by making explicit the non-renewable nature of archaeological resources and their associated documentation.

Possible Topics: Looters and trafficking, conservation ethic, non-renewable resource, law enforcement training, site management and protection.

2) Diverse Interests

The archaeology curriculum makes students aware that archaeologists no longer have exclusive rights to the past, but that various publics have a stake in the past. Diverse groups—such as descendant communities; state, local, and federal agencies; and others—compete for and have vested interests in the nonrenewable resources of the past.

Possible Topics: Different views of the past, partnerships (collaboration with many groups), public involvement (reporting results), political uses of the past (nation building).

3) Social Relevance

If archaeology is to be justified as a discipline—in terms of both public support and interest—then we must effectively articulate the ways in which we can use the past to help students think productively about the present and the future.

Possible Topics: Population dynamics, environmental history, systems of social inequality, warfare, health and disease, garbage.

4) Ethics and Values

The articulation of ethics and values are seen as the sign of growth and maturation in the profession. The eight SAA Principles of Archaeological Ethics are fundamental to how archaeologists conduct themselves in relation to the resources, their data, their colleagues, and the public. The linking of these principles to specific points within the curriculum will provide students with a basic foundation when establishing their interest in the study of cultural resources.

Possible Topics: Principles of archaeological ethics, preservation law.

5) Written and Oral Communication

Archaeology depends on the understanding and support of the public. For this to occur, archaeologists must communicate their goals, results and recommendations clearly and effectively. Archaeology training must incorporate training and frequent practice in logical thinking as well as written and oral presentation.
Possible Topics: Clear writing (implied clear thinking), clear speaking, public speaking, computer literacy.

6) Basic Archaeological Skills

Students planning on a career in archaeology must have mastered a set of basic cognitive and methodological skills that enable them to operate effectively in the field and laboratory contexts. These skills must span the range of basic professional responsibility: excavation, analysis, report writing, and long term curation.

Possible Topics: Observation skills, inferential skills, basic map skills, organize and assess data, knowledge of the law, technical writing.

7) Real World Problem Solving

It is our public service responsibility as educators to demonstrate through examples and assignments a basic understanding of how business, politics and local community or bureaucracies work, as well as to foster an understanding of preservation laws and regulations.

Possible Topics: Professional responsibilities and accountability, archaeopolitics, citizenship, how business works, legal and regulatory framework.
Appendix 5 — Consent Form

University College London
Institute of Archaeology

Photographic, Audio, Video and/or Written Transcript
Records Release Consent Form

As part of a study of conservation practice for my Ph.D. thesis, photographic, audio, and/or video recordings were made of you. Most likely, only excerpts of written transcripts from the video records will be used (if you consent). However it is possible that the video records themselves will also be used.

Project Description

The purpose of this research is to gain an understanding about the ways that conservation practice differs from archaeological practice. Since differences are most visible during interaction between archaeologists and conservators, I am particularly interested in discussion between members of the two professions during activities in the field. The intent of these observations is not to evaluate the interaction. Although my presence alone may impact activities, my intent is to have the least possible effect on the ongoing work.

Benefits and Risks for Participants

As a participant in this project, you will not be paid. However the aim of the research is to help conservators and archaeologists develop a deeper understanding of each others' profession, and therefore work together even more effectively.

Although names will not be used, it is possible that faces may be recognized if excerpts from the video recordings are used. Excerpts of the written transcription and video records will appear in the thesis (if you consent), and therefore will be seen by my thesis examiners.

Please indicate below what uses of these records you are willing to consent to. It is completely up to you. Records will only be used in ways that you agree to and kept only by me. In any use of these records, names will not be used.

Consent

Please initial each type of record that you are willing to consent to:

1. The audiovisual and/or written transcript records can be studied by this researcher for use in this research project.
   Photo Audio Video Written Transcripts
   [Please use initials to indicate consent]

2. The audiovisual and/or written transcript records can be shown to participants in other research projects.
   Photo Audio Video Written Transcripts
   [Please use initials to indicate consent]
Appendix 5 (Cont’d) — Consent Form

3. The audiovisual and/or written transcript records can be used for publication.
   Photo________ Audio________ Video________ Written Transcripts________
   [Please use initials to indicate consent]

4. The audiovisual and/or written transcript records can be kept in an archive for other researchers to review (however, these researchers must ask you for consent to use them).
   Photo________ Audio________ Video________ Written Transcripts________
   [Please use initials to indicate consent]

5. The audiovisual and/or written transcript records can be shown at meetings of scholars.
   Photo________ Audio________ Video________ Written Transcripts________
   [Please use initials to indicate consent]

6. The audiovisual and/or written transcript records can be shown in classrooms to students.
   Photo________ Audio________ Video________ Written Transcripts________
   [Please use initials to indicate consent]

I have read the above description and give my consent for the use of the records as indicated above.

Name____________________________________________________________________
Native language _________________________________ Age________ Gender _________
Title_____________________________________________________________________
Affiliation________________________________________________________________
Signature__________________________________________ Date_____________________

Thank you for your participation.

Researcher contact information:

Jacqueline Zak
Ph.D. Candidate
Institute of Archaeology
University College London
Telephone: 310.440.6226
Fax: 310.440.7712
Email: jzak@getty.edu

(Form adapted from "Photographic, Audio and/or Video Records Release Consent Form" developed by Susan M. Ervin-Tripp, University of California, Berkeley)
### Appendix 6 – Participants Observed

<table>
<thead>
<tr>
<th>Location</th>
<th>Discipline</th>
<th>Country of Training</th>
<th>Country of Origin</th>
<th>Field Seasons</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case One</td>
<td>Conservator</td>
<td>Canada</td>
<td>Canada</td>
<td>Second</td>
<td>Female</td>
</tr>
<tr>
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<td>UK</td>
<td>Greece</td>
<td>Second</td>
<td>Female</td>
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<td>Case One</td>
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<td>Netherlands</td>
<td>Second</td>
<td>Female</td>
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<tr>
<td>Case One</td>
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<td>Turkey</td>
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<td>Female</td>
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<td>UK</td>
<td>First and Second</td>
<td>Female</td>
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<td>UK</td>
<td>First and Second</td>
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<td>UK</td>
<td>Second</td>
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<td>UK</td>
<td>Second</td>
<td>Female</td>
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<td>Female</td>
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<tr>
<td>Case One</td>
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<td>US</td>
<td>First and Second</td>
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<td>US</td>
<td>First and Second</td>
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<td>US</td>
<td>First Day</td>
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### Appendix 6 (cont'd) – Participants Observed

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<th>Country of Origin</th>
<th>Field Seasons</th>
<th>Gender</th>
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<td>US</td>
<td>US</td>
<td>First Day</td>
<td>Male</td>
</tr>
<tr>
<td>Case Three</td>
<td>Archaeologist</td>
<td>US</td>
<td>US</td>
<td>First Day</td>
<td>Male</td>
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Appendix 7 — Codes of Ethics and Guidelines for Practice
The primary goal of conservation professionals, individuals with extensive training and special expertise, is the preservation of cultural property. Cultural property consists of individual objects, structures, or aggregate collections. It is material which has significance that may be artistic, historical, scientific, religious, or social, and it is an invaluable and irreplaceable legacy that must be preserved for future generations.

In striving to achieve this goal, conservation professionals assume certain obligations to the cultural property, to its owners and custodians, to the conservation profession, and to society as a whole. This document, the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC), sets forth the principles that guide conservation professionals and others who are involved in the care of cultural property.

The conservation professional shall strive to attain the highest possible standards in all aspects of conservation, including, but not limited to, preventive conservation, examination, documentation, treatment, research, and education.

All actions of the conservation professional must be governed by an informed respect for the cultural property, its unique character and significance, and the people or person who created it.

While recognizing the right of society to make appropriate and respectful use of cultural property, the conservation professional shall serve as an advocate for the preservation of cultural property.

The conservation professional shall practice within the limits of personal competence and education as well as within the limits of the available facilities.

While circumstances may limit the resources allocated to a particular situation, the quality of work that the conservation professional performs shall not be compromised.

The conservation professional must strive to select methods and materials that, to the best of current knowledge, do not adversely affect cultural property or its future examination, scientific investigation, treatment, or function.

The conservation professional shall document examination, scientific investigation, and treatment by creating permanent records and reports.

The conservation professional shall recognize a responsibility for preventive conservation by endeavoring to limit damage or deterioration to cultural property, providing guidelines for continuing use and care, recommending appropriate environmental conditions for storage and exhibition, and encouraging proper procedures for handling, packing, and transport.

The conservation professional shall act with honesty and respect in all professional relationships, seek to ensure the rights and opportunities of all individuals in the profession, and recognize the specialized knowledge of others.
The conservation professional shall contribute to the evolution and growth of the profession, a field of study that encompasses the liberal arts and the natural sciences. This contribution may be made by such means as continuing development of personal skills and knowledge, sharing of information and experience with colleagues, adding to the profession's written body of knowledge, and providing and promoting educational opportunities in the field.

The conservation professional shall promote an awareness and understanding of conservation through open communication with allied professionals and the public.

The conservation professional shall practice in a manner that minimizes personal risks and hazards to co-workers, the public, and the environment.

Each conservation professional has an obligation to promote understanding of and adherence to this Code of Ethics.

GUIDELINES FOR PRACTICE of the American Institute for Conservation of Historic and Artistic Works

The conservation professional should use the following guidelines and supplemental commentaries together with the AIC Code of Ethics in the pursuit of ethical practice. The commentaries are separate documents, created by the AIC membership, that are intended to amplify this document and to accommodate growth and change in the field.

PROFESSIONAL CONDUCT

Conduct: Adherence to the Code of Ethics and Guidelines for Practice is a matter of personal responsibility. The conservation professional should always be guided by the intent of this document, recognizing that specific circumstances may legitimately affect professional decisions.

Disclosure: In professional relationships, the conservation professional should share complete and accurate information relating to the efficacy and value of materials and procedures. In seeking and disclosing such information, and that relating to analysis and research, the conservation professional should recognize the importance of published information that has undergone formal peer review.

Laws and Regulations: The conservation professional should be cognizant of laws and regulations that may have a bearing on professional activity. Among these laws and regulations are those concerning the rights of artists and their estates, occupational health and safety, sacred and religious material, excavated objects, endangered species, human remains, and stolen property.

Practice: Regardless of the nature of employment, the conservation professional should follow appropriate standards for safety, security, contracts, fees, and advertising.

Health and Safety: The conservation professional should be aware of issues concerning the safety of materials and procedures and should make this information available to others, as appropriate.

Security: The conservation professional should provide working and storage conditions designed to protect cultural property.
Contracts: The conservation professional may enter into contractual agreements with individuals, institutions, businesses, or government agencies provided that such agreements do not conflict with principles of the Code of Ethics and Guidelines for Practice.

Fees: Fees charged by the conservation professional should be commensurate with services rendered. The division of a fee is acceptable only when based on the division of service or responsibility.

Advertising: Advertising and other representations by the conservation professional should present an accurate description of credentials and services. Limitations concerning the use of the AIC name or membership status should be followed as stated in the AIC Bylaws, section II, 13.

Communication: Communication between the conservation professional and the owner, custodian, or authorized agent of the cultural property is essential to ensure an agreement that reflects shared decisions and realistic expectations.

Consent: The conservation professional should act only with the consent of the owner, custodian, or authorized agent. The owner, custodian, or agent should be informed of any circumstances that necessitate significant deviations from the agreement. When possible, notification should be made before such changes are made.

Confidentiality: Except as provided in the Code of Ethics and Guidelines for Practice, the conservation professional should consider relationships with an owner, custodian, or authorized agent as confidential. Information derived from examination, scientific investigation, or treatment of the cultural property should not be published or otherwise made public without written permission.

Supervision: The conservation professional is responsible for work delegated to other professionals, students, interns, volunteers, subordinates, or agents and assignees. Work should not be delegated or subcontracted unless the conservation professional can supervise the work directly, can ensure proper supervision, or has sufficient knowledge of the practitioner to be confident of the quality of the work. When appropriate, the owner, custodian, or agent should be informed if such delegation is to occur.

9. Education: Within the limits of knowledge, ability, time, and facilities, the conservation professional is encouraged to become involved in the education of conservation personnel. The objectives and obligations of the parties shall be agreed upon mutually.

Consultation: Since no individual can be expert in every aspect of conservation, it may be appropriate to consult with colleagues or, in some instances, to refer the owner, custodian, or authorized agent to a professional who is more experienced or better equipped to accomplish the required work. If the owner requests a second opinion, this request must be respected.

Recommendations and References: The conservation professional should not provide recommendations without direct knowledge of a colleague's competence and experience. Any reference to the work of others must be based on facts and personal knowledge rather than on hearsay.
Adverse Commentary: A conservation professional may be required to testify in legal, regulatory, or administrative proceedings concerning allegations of unethical conduct. Testimony concerning such matters should be given at these proceedings or in connection with paragraph 13 of these Guidelines.

Misconduct: Allegations of unethical conduct should be reported in writing to the AIC president as described in the AIC Bylaws, section II, 12. As stated in the bylaws, all correspondence regarding alleged unethical conduct shall be held in the strictest confidence. Violations of the Code and Guidelines that constitute unethical conduct may result in disciplinary action.

Conflict of Interest: The conservation professional should avoid situations in which there is a potential for a conflict of interest that may affect the quality of work, lead to the dissemination of false information, or give the appearance of impropriety.

Related Professional Activities: The conservation professional should be especially mindful of the considerable potential for conflict of interest in activities such as authentication, appraisal, or art dealing.

EXAMINATION AND SCIENTIFIC INVESTIGATION
Justification: Careful examination of cultural property forms the basis for all future action by the conservation professional. Before undertaking any examination or tests that may cause change to cultural property, the conservation professional should establish the necessity for such procedures.

Sampling and Testing: Prior consent must be obtained from the owner, custodian, or agent before any material is removed from a cultural property. Only the minimum required should be removed, and a record of removal must be made. When appropriate, the material removed should be retained.

Interpretation: Declarations of age, origin, or authenticity should be made only when based on sound evidence.

Scientific Investigation: The conservation professional should follow accepted scientific standards and research protocols.

PREVENTIVE CONSERVATION
Preventive Conservation: The conservation professional should recognize the critical importance of preventive conservation as the most effective means of promoting the long-term preservation of cultural property. The conservation professional should provide guidelines for continuing use and care, recommend appropriate environmental conditions for storage and exhibition, and encourage proper procedures for handling, packing, and transport.

TREATMENT
Suitability: The conservation professional performs within a continuum of care and will rarely be the last entrusted with the conservation of a cultural property. The conservation professional should only recommend or undertake treatment that is judged suitable to the preservation of the aesthetic, conceptual, and physical character of the cultural property. When nonintervention best serves to promote the preservation of the cultural property, it may be appropriate to recommend that no treatment be performed.
Materials and Methods: The conservation professional is responsible for choosing materials and methods appropriate to the objectives of each specific treatment and consistent with currently accepted practice. The advantages of the materials and methods chosen must be balanced against their potential adverse effects on future examination, scientific investigation, treatment, and function.

Compensation for Loss: Any intervention to compensate for loss should be documented in treatment records and reports and should be detectable by common examination methods. Such compensation should be reversible and should not falsely modify the known aesthetic, conceptual, and physical characteristics of the cultural property, especially by removing or obscuring original material.

DOCUMENTATION

Documentation: The conservation professional has an obligation to produce and maintain accurate, complete, and permanent records of examination, sampling, scientific investigation, and treatment. When appropriate, the records should be both written and pictorial. The kind and extent of documentation may vary according to the circumstances, the nature of the object, or whether an individual object or a collection is to be documented. The purposes of such documentation are:

- to establish the condition of cultural property;
- to aid in the care of cultural property by providing information helpful to future treatment and by adding to the profession's body of knowledge;
- to aid the owner, custodian, or authorized agent and society as a whole in the appreciation and use of cultural property by increasing understanding of an object's aesthetic, conceptual, and physical characteristics; and to aid the conservation professional by providing a reference that can assist in the continued development of knowledge and by supplying records that can help avoid misunderstanding and unnecessary litigation.

Documentation of Examination: Before any intervention, the conservation professional should make a thorough examination of the cultural property and create appropriate records. These records and the reports derived from them must identify the cultural property and include the date of examination and the name of the examiner. They also should include, as appropriate, a description of structure, materials, condition, and pertinent history.

Treatment Plan: Following examination and before treatment, the conservation professional should prepare a plan describing the course of treatment. This plan should also include the justification for and the objectives of treatment, alternative approaches, if feasible, and the potential risks. When appropriate, this plan should be submitted as a proposal to the owner, custodian, or authorized agent.

Documentation of Treatment: During treatment, the conservation professional should maintain dated documentation that includes a record or description of techniques or procedures involved, materials used and their composition, the nature and extent of all alterations, and any additional information revealed or otherwise ascertained. A report prepared from these records should summarize this information and provide, as necessary, recommendations for subsequent care.
Preservation of Documentation: Documentation is an invaluable part of the history of cultural property and should be produced and maintained in as permanent a manner as practicable. Copies of reports of examination and treatment must be given to the owner, custodian, or authorized agent, who should be advised of the importance of maintaining these materials with the cultural property. Documentation is also an important part of the profession's body of knowledge. The conservation professional should strive to preserve these records and give other professionals appropriate access to them, when access does not contravene agreements regarding confidentiality.

EMERGENCY SITUATIONS
Emergency Situations: Emergency situations can pose serious risks of damage to or loss of cultural property that may warrant immediate intervention on the part of the conservation professional. In an emergency that threatens cultural property, the conservation professional should take all reasonable action to preserve the cultural property, recognizing that strict adherence to the Guidelines for Practice may not be possible.

AMENDMENTS
Amendments: Proposed amendments to the Code of Ethics and Guidelines for Practice must be initiated by petition to the AIC Board of Directors from at least five members who are Fellows or Professional Associates of AIC. The board will direct the appropriate committee to prepare the amendments for vote in accordance with procedures described in Section VII of the Bylaws. Acceptance of amendments or changes must be affirmed by at least two-thirds of all AIC Fellows and Professional Associates voting.

COMMENTARIES
Commentaries: Commentaries are prepared or amended by specialty groups, task forces, and appropriate committees of AIC. A review process shall be undergone before final approval by the AIC Board of Directors.
Appendix 7.2 – UKICAS - Guidance for Archaeological Conservation Practice
Archaeology Section, UKIC
(Source: http://palimpsest.stanford.edu/ukic/arch/gacp.html)

Introduction
UKIC drew up Guidance for Conservation Practice in 1981 and published a revised version in 1983. This has been accepted by all branches of conservation in the UK. It has been felt, however, that some points need to be expanded, and new ones added, to deal with the particular needs of the members of the Archaeology Section. So, using the parent body's guidance document as a basis, the following has been drawn up by Karen Wardley.

The purpose of Archaeological Conservation
Archaeological conservation is the means by which the true nature of an object is revealed and preserved. The true nature of an archaeological object includes evidence of the technology and materials used in its original construction and any subsequent pre-burial modifications, its usage, and the circumstances and nature of its burial environment. Repairs or alterations made subsequent to its excavation may also be significant to the object's history, in which case they too should be fully recorded and/or preserved. Decisions on appropriate action should be made in conjunction with other specialists, e.g. archaeologists, curators, finds researchers - after careful examination and research.

In order not to change the true nature of the object, certain rules should be observed in its care and maintenance. Since it is the conservator who has the power to preserve or distort its true nature, the following describes the responsibility of the archaeological conservator to the object.

The Archaeological Conservator and the Object

General obligations
All professional actions of the archaeological conservator are governed by a respect for the physical, historic and aesthetic integrity of the object. Responsibility for the welfare of the object should begin when the object is removed from its burial environment, and continue through all the post-excavation stages. Concern for its future should include protection against further deterioration, damage and loss.

One standard
With every object he or she undertakes to conserve, regardless of any opinion of its value or quality, the archaeological conservator should adhere to the highest and most exacting standard of treatment.

Archaeological objects are often of no great financial or artistic worth, but are important for the archaeological and technological evidence they can provide. Although circumstances may limit the extent of treatment, the quality should never be lowered. While special techniques may be required during the treatment of large groups of objects, these procedures should be consistent with respect for the integrity of the individual

Suitability of treatment: reversibility
The archaeological conservator should not perform or recommend any treatment which is not appropriate to the preservation of the object. The archaeological conservator should endeavour to use techniques and materials which, to the best of current knowledge, will
not endanger the true nature of the object, either immediately or in the long term, and which will not impede further treatment or the retrieval of information through scientific examination. There should be minimum intervention to objects destined for scientific analysis.

In the knowledge that few treatments are completely reversible, the archaeological conservator should evaluate carefully the possible effects of any techniques or materials, and where possible select those which current research shows will alter the object to the least possible extent, and which can be reversed most easily and completely with the least damage to the object. An improvement in conditions of display, storage or use may often be preferable to physical intervention.

Nothing should be removed from an object unless there is sufficient evidence that it is not part of the original condition of the object, or indicative of the object's use or history.

**Examination and records**
Before carrying out any treatment, the archaeological conservator should first make an adequate examination of the object and all available documentation. Where appropriate, he or she should consult the relevant specialists in order to record the object's condition and history, and to establish the causes of its deterioration. A full record of methods and materials used should be kept as a permanent, accessible archive, preferably with the rest of the object's documentation.

**Restoration**
It is unethical to modify or conceal the true nature of an object through restoration. The presence and extent of restoration must be detectable, though it need not be conspicuous. Materials used must be compatible with the future welfare of the object, and all restorations must be fully documented in an accessible form.

**Professional Competence and Knowledge**

**Recognition of limitations**
Conservation and investigation should be undertaken only within the limits of the archaeological conservator's professional competence and facilities. Moreover, it is the responsibility of the archaeological conservator to keep up with current knowledge, and to continue to develop skills so as to give the best treatment possible.

**Disclosure of knowledge**
There should be no secrecy about any technique or materials used in conservation. The development of a new method of treatment or a new material, and the composition and properties of all materials and techniques employed, should be fully disclosed as far as they are known. The originator is expected to co-operate with other conservators and conservation scientists employing or evaluating the proposed new methods or materials. Commercial products protected by trademark or copyright should be thoroughly tested before being applied to archaeological objects, and, wherever possible, products of known composition should be used in preference.

**Professional Relationships**

**Colleagues**
It is the responsibility of the archaeological conservator, as the person with the necessary technical knowledge, to uphold the best interests of the object, and to give an honest opinion as to the best course of treatment. Unqualified persons, however, should be
discouraged from carrying out conservation work on their own, and advice on specific treatments should be given only to another conservator.

It is the duty of the archaeological conservator, when dealing with freshly excavated material, to liaise at the earliest opportunity with the archaeologist conducting an excavation to ensure that correct procedures are followed for the well-being of the object from the time of its excavation until it reaches the laboratory. Before starting to treat an object, an archaeological conservator should consider the advice of colleagues and those responsible for the object, and the needs of finds researchers, curators, illustrators and other parties involved in the publication, storage or display of the object. It is the duty of the archaeological conservator at all appropriate times to volunteer advice to the owner or those responsible on the subsequent care of a conserved object with regard to its handling, transportation, packaging and conditions of storage and display.

Trainees
The archaeological conservator has a responsibility to encourage trainees to acquire qualifications recognised by UKIC, and where possible actively to assist in their education. Adequate time should be set aside for this. However, training and instruction in conservation should only be given within the limits of the archaeological conservator's knowledge and competence, and the facilities available.

Delegating and sub-contracting
If the archaeological conservator delegates work on objects, he or she is directly responsible for the work. This includes work delegated to trainees, subordinates or outside agencies. Work should not be delegated or sub-contracted unless the archaeological conservator can directly supervise it, or has sufficient knowledge of the agent.

Education of the public
Whenever the opportunity arises, the archaeological conservator should educate the public in the aims and activities of the profession, to increase public awareness and understanding of archaeological conservation.

Health and safety
Archaeological conservators should familiarise themselves and comply with current health and safety legal requirements to ensure their own safety, that of other workers, and any other person who may be affected by their acts.

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Appendix 7.3 — SAA Principles of Archaeological Ethics
(Source: http://www.saa.org/aboutSAA/committees/ethics/principles.html)

At its April 10, 1996 meeting, the SAA Executive Board adopted the Principles of Archaeological Ethics, reproduced below, as proposed by the SAA Ethics in Archaeology Committee. The adoption of these principles represents the culmination of an effort begun in 1991 with the formation of the ad-hoc Ethics in Archaeology Committee. The committee was charged with considering the need for revising the society's existing statements on ethics. A 1993 workshop on ethics, held in Reno, resulted in draft principles that were presented at a public forum at the 1994 annual meeting in Anaheim. SAA published the draft principles with position papers from the forum and historical commentaries in a special report distributed to all members, Ethics and Archaeology: Challenges for the 1990s, edited by Mark. J. Lynott and Alison Wylie (1995). Member comments were solicited in this special report, through a notice in SAA Bulletin, and at two sessions held at the SAA booth during the 1995 annual meeting in Minneapolis. The final principles, presented here, are revised from the original draft based on comments from members and the Executive Board.

The Executive Board strongly endorses these principles and urges their use by all archaeologists "in negotiating the complex responsibilities they have to archaeological resources, and to all who have an interest in these resources or are otherwise affected by archaeological practice (Lynott and Wylie 1995:8)." The board is grateful to those who have contributed to the development of these principles, especially the members of the Ethics in Archaeology Committee, chaired by Mark. J. Lynott and Alison Wylie, for their skillful completion of this challenging and important task. The bylaws change just voted by the members has established a new standing committee, the Committee on Ethics, that will carry on with these crucial efforts.

Principle No. 1:

Stewardship
The archaeological record, that is, in situ archaeological material and sites, archaeological collections, records and reports, is irreplaceable. It is the responsibility of all archaeologists to work for the long-term conservation and protection of the archaeological record by practicing and promoting stewardship of the archaeological record. Stewards are both caretakers of and advocates for the archaeological record for the benefit of all people; as they investigate and interpret the record, they should use the specialized knowledge they gain to promote public understanding and support for its long-term preservation.

Principle No. 2:

Accountability
Responsible archaeological research, including all levels of professional activity, requires an acknowledgment of public accountability and a commitment to make every reasonable effort, in good faith, to consult actively with affected group(s), with the goal of establishing a working relationship that can be beneficial to all parties involved.
Principle No. 3:

Commercialization
The Society for American Archaeology has long recognized that the buying and selling of objects out of archaeological context is contributing to the destruction of the archaeological record on the American continents and around the world. The commercialization of archaeological objects - their use as commodities to be exploited for personal enjoyment or profit - results in the destruction of archaeological sites and of contextual information that is essential to understanding the archaeological record. Archaeologists should therefore carefully weigh the benefits to scholarship of a project against the costs of potentially enhancing the commercial value of archaeological objects. Whenever possible they should discourage, and should themselves avoid, activities that enhance the commercial value of archaeological objects, especially objects that are not curated in public institutions, or readily available for scientific study, public interpretation, and display.

Principle No. 4:

Public Education and Outreach
Archaeologists should reach out to, and participate in cooperative efforts with others interested in the archaeological record with the aim of improving the preservation, protection, and interpretation of the record. In particular, archaeologists should undertake to: 1) enlist public support for the stewardship of the archaeological record; 2) explain and promote the use of archaeological methods and techniques in understanding human behavior and culture; and 3) communicate archaeological interpretations of the past. Many publics exist for archaeology including students and teachers; Native Americans and other ethnic, religious, and cultural groups who find in the archaeological record important aspects of their cultural heritage; lawmakers and government officials; reporters, journalists, and others involved in the media; and the general public. Archaeologists who are unable to undertake public education and outreach directly should encourage and support the efforts of others in these activities.

Principle No. 5:

Intellectual Property
Intellectual property, as contained in the knowledge and documents created through the study of archaeological resources, is part of the archaeological record. As such it should be treated in accord with the principles of stewardship rather than as a matter of personal possession. If there is a compelling reason, and no legal restrictions or strong countervailing interests, a researcher may have primary access to original materials and documents for a limited and reasonable time, after which these materials and documents must be made available to others.

Principle No. 6:

Public Reporting and Publication
Within a reasonable time, the knowledge archaeologists gain from investigation of the archaeological record must be presented in accessible form (through publication or other means) to as wide a range of interested publics as possible. The documents and materials on which publication and other forms of public reporting are based should be deposited in
a suitable place for permanent safekeeping. An interest in preserving and protecting *in situ* archaeological sites must be taken into account when publishing and distributing information about their nature and location.

**Principle No. 7:**

**Records and Preservation**
Archaeologists should work actively for the preservation of, and long term access to, archaeological collections, records, and reports. To this end, they should encourage colleagues, students, and others to make responsible use of collections, records, and reports in their research as one means of preserving the *in situ* archaeological record, and of increasing the care and attention given to that portion of the archaeological record which has been removed and incorporated into archaeological collections, records, and reports.

**Principle No. 8:**

**Training and Resources**
Given the destructive nature of most archaeological investigations, archaeologists must ensure that they have adequate training, experience, facilities, and other support necessary to conduct any program of research they initiate in a manner consistent with the foregoing principles and contemporary standards of professional practice.
Appendix 7.4 — AIA Code of Professional Standards

CODE OF PROFESSIONAL STANDARDS

Preamble

This Code applies to those members of the AIA who play an active, professional role in the recovery, care, study, or publication of archaeological material, including cultural resources located under water. Within the Institute they enjoy the privileges of organizing sessions and submitting papers for the Annual Meetings, of lecturing to local societies, participating in the AIA committees that shape and direct the discipline, participating in the placement service, and of being listed in the Directory of Professionals in Archaeology.

Along with those privileges come special responsibilities. Our members should inform themselves about and abide by the laws of the countries in which they live and work. They should treat others at home and in the field with respect and sensitivity. As primary stewards of the archaeological record, they should work actively to preserve that record in all its dimensions and for the long term; and they should give due consideration to the interests of others, both colleagues and the lay public, who are affected by the research.

The AIA recognizes that archaeology is a discipline dealing, in all its aspects, with the human condition, and that archaeological research must often balance competing ethical principles. This Code of Professional Standards does not seek to legislate all aspects of professional behavior and it realizes the conflicts embedded in many of the issues addressed. The Code sets forth three broad areas of responsibility and provides examples of the kinds of considerations called for by each. It aims to encourage all professional archaeologists to keep ethical considerations in mind as they plan and conduct research.

Responsibilities to the Archaeological Record

Professional archaeologists incur responsibilities to the archaeological record — the physical remains and all the associated information about those remains, including those located under water.

1. Professional archaeologists should adhere to the Guidelines of the AIA general Code of Ethics concerning illegal antiquities in their research and publications.

2. The purposes and consequences of all archaeological research should be carefully considered before the beginning of work. Approaches and methods should be chosen that require a minimum of damage to the archaeological record. Although excavation is sometimes the appropriate means of research, archaeological survey, study of previously excavated material, and other means should be considered before resort is made to excavation.
3. The recovery and study of archaeological material from all periods should be carried out only under the supervision of qualified personnel.

4. Archaeologists should anticipate and provide for adequate and accessible long-term storage and curatorial facilities for all archaeological materials, records, and archives, including machine-readable data, which require specialized archival care and maintenance.

5. Archaeologists should make public the results of their research in a timely fashion, making evidence available to others if publication is not accomplished within a reasonable time.

6. All research projects should contain specific plans for conservation, preservation, and publication from the very outset, and funds should be secured for such purposes.

Responsibilities to the Public

Because the archaeological record represents the heritage of all people, it is the responsibility of professional archaeologists to communicate with the general public about the nature of archaeological research and the importance of archaeological resources. Archaeologists also have specific responsibilities to the local communities where they carry out research and field work, as well as to their home institutions and communities.

Archaeologists should be sensitive to cultural mores and attitudes and be aware of the impact research and field work may have on a local population, both during and after the work. Such considerations should be taken into account in designing the project's strategy.

1. Professional archaeologists should be actively engaged in public outreach through lecturing, popular writing, school programs, and other educational initiatives.

2. Plans for field work should consider the ecological impact of the project and its overall impact on the local communities.

3. Professional archaeologists should not participate in projects whose primary goal is private gain.

4. For field projects, archaeologists should consult with appropriate representatives of the local community during the planning stage, invite local participation in the project, and regularly inform the local community about the results of the research.

5. Archaeologists should respect the cultural norms and dignity of local inhabitants in areas where archaeological research is carried out.

6. The legitimate concerns of people who claim descent from, or some other connection with, cultures of the past must be balanced against the scholarly integrity of the discipline. A mutually acceptable accommodation should be sought.
Responsibilities To Colleagues

Professional archaeologists owe consideration to colleagues, striving at all times to be fair, never plagiarize, and give credit where due.

1. Archaeologists involved in cooperative projects should strive for harmony and fairness; those in positions of authority should behave with consideration toward those under their authority, while all team members should strive to promote the success of the broader undertaking.

2. The principal investigator(s) of archaeological projects should maintain acceptable standards of safety and ascertain that staff members are adequately insured.

3. Professional archaeologists should maintain confidentiality of information gleaned in reviewing grant proposals and other such privileged sources.

4. Professional archaeologists should not practice discrimination or harassment based on sex, religion, age, race, national origin, disability, or sexual orientation; project sponsors should establish the means to eliminate and/or investigate complaints of discrimination or harassment.

5. Archaeologists should honor reasonable requests from colleagues for access to materials and records, preserving existing rights to publication, but sharing information useful for the research of others. Scholars seeking access to unpublished information should not expect to receive interpretive information if that is also unpublished and in progress.

6. Before studying and/or publishing any unpublished material archaeologists should secure proper permission, normally in writing, from the appropriate project director or the appointed representative of the sponsoring institution and/or the antiquities authorities in the country of origin.

7. Scholars studying material from a particular site should keep the project director informed of their progress and intentions; project directors should return the courtesy.

8. Members of cooperative projects should prepare and evaluate reports in a timely and collegial fashion.
Appendix 7.5 — IFA Code of conduct
("Setting Professional Standards")
(Source: http://www.archaeologists.net/modules/icontent/inPages/docs/codes/)

Introduction
The object of the Code is to promote those standards of conduct and self-discipline required of an archaeologist in the interests of the public and in the pursuit of archaeological research. Archaeology is the study of the nature and past behaviour of human beings in their environmental setting. It is carried out through the investigation and interpretation of the material remains of human activities, which together constitute the archaeological heritage. The archaeological heritage is a finite, vulnerable and diminishing resource.

The fuller understanding of our past provided by archaeology is part of society's common heritage and it should be available to everyone. Because of this, and because the archaeological heritage is an irreplaceable resource, archaeologists both corporately and individually have a responsibility to help conserve the archaeological heritage, to use it economically in their work, to conduct their studies in such a way that reliable information may be acquired, and to disseminate the results of their studies.

Subscription to this Code of conduct for individuals engaged in archaeology assumes acceptance of these responsibilities. Those who subscribe to it and carry out its provisions will thereby be identified as persons professing specific standards of competence, responsibility and ethical behaviour in the pursuit of archaeological work.

The Code indicates the general standard of conduct to which members of the Institute are expected to adhere, failing which its governing body may judge them guilty of conduct unbecoming to a member of the Institute and may either reprimand, suspend or expel them. The Institute from time to time produces written standards and guidance for the execution of archaeological projects, and policy statements. All members are advised to respect such standards, guidance and policy statements in the interests of good professional practice; a full list of the IFA Standard and guidance documents published to date will be found in the ‘Further reading’ section.

The Code of conduct was formally ratified and adopted as a by-law of the Institute at the Annual General Meeting held on 3 June 1985, and amended by Ordinary Resolutions passed at Annual General Meetings held on 12 September 1988, 17 September 1993, 14 October 1994, 22 September 1995, 11 September 1996, 10 September 1997 and 7 September 2000. It should be read in conjunction with the Memorandum and Articles of Association, Code of approved practice for the regulation of contractual arrangements in field archaeology, Disciplinary regulations and Standard and guidance documents (by-law enacted under Article 44, pursuant to Clause 3 of the Memorandum)

Principle 1
The archaeologist shall adhere to the highest standards of ethical and responsible behaviour in the conduct of archaeological affairs.

Rules
1.1 An archaeologist shall conduct himself or herself in a manner which will not bring archaeology or the Institute into disrepute.
1.2 An archaeologist shall present archaeology and its results in a responsible manner and shall avoid and discourage exaggerated, misleading or unwarranted statements about archaeological matters.

1.3 An archaeologist shall not offer advice, make a public statement, or give legal testimony involving archaeological matters, without being as thoroughly informed on the matters concerned as might reasonably be expected.

1.4 An archaeologist shall not undertake archaeological work for which he or she is not adequately qualified. He or she should ensure that adequate support, whether of advice, personnel or facilities, has been arranged.

Note:
It is the archaeologist’s responsibility to inform current or prospective employers or clients of inadequacies in his/her qualifications for any work which may be proposed; he/she may of course seek to minimise such inadequacies by acquiring additional expertise, by seeking the advice or involvement of associates or consultants, or by arranging for modifications of the work involved; similar considerations apply where an archaeologist, during the course of a project, encounters problems which lie beyond his/her competence at that time.

It is also the archaeologist’s responsibility to seek adequate support services for any project in which he/she may become involved, either directly or by way of recommendation.

1.5 An archaeologist shall give appropriate credit for work done by others, and shall not commit plagiarism in oral or written communication, and shall not enter into conduct that might unjustifiably injure the reputation of another archaeologist.

1.6 An archaeologist shall know and comply with all laws applicable to his or her archaeological activities whether as employer or employee, and with national and international agreements relating to the illicit import, export or transfer of ownership of archaeological material. An archaeologist shall not engage in, and shall seek to discourage, illicit or unethical dealings in antiquities.

Note:
(a) The archaeologist should also consider his/her position in respect of seeking or accepting financial benefit on his/her own behalf or that of relatives in relation to the recovery or disposal of objects or materials recovered during archaeological work.

(b) Archaeologists working on the foreshore and underwater may at times find themselves in difficulty regarding their association with commercial salvors and others engaged in exploiting the underwater cultural heritage.

1.11 An archaeologist shall take account of the legitimate concerns of groups whose material past may be the subject of archaeological investigation. Underlying principles are 1) conserving the seabed heritage, 2) using it economically and in such a way that reliable information may be acquired, 3) dissemination of the results and 4) professional permanent curation of the total site archive.

It may be a legitimate part of the archaeologist’s duty to work with commercial salvage organisations or individuals, in respect of recording sites and material, including possible
museum acquisitions, and assessing sites and the work that takes place on them. In such dealings, however, archaeologists must ensure that:

1) they do not knowingly permit their names or services to be used in a manner which may promote the recovery of archaeological material unless the primary objective of their work is to preserve the scientific integrity of the total site archive in a permanent professionally curated and publicly accessible collection, and unless provision is made for its study, interpretation and publication

2) they do not enter into any contract or agreement whereby archaeological or curatorial standards may be compromised in deference to commercial interests

3) so far as excavated material is concerned, they do not encourage the purchase of objects in any case where they have reasonable cause to believe that their recovery involved the deliberate unscientific destruction or damage failure to disclose the finds to the proper legal or of archaeological sites, and that they discourage the sale and consequent dispersal of excavated material

4) they do not encourage the purchase of objects where there is reasonable cause to believe that recovery involved the governmental authorities.

1.7 An archaeologist shall abstain from, and shall not sanction in others, conduct involving dishonesty, fraud, deceit or misrepresentation in archaeological matters, nor knowingly permit the use of his/her name in support of activities involving such conduct.

1.8 An archaeologist, in the conduct of his/her archaeological work, shall not offer or accept inducements which could reasonably be construed as bribes.

1.9 [deleted]

1.10 An archaeologist shall not reveal confidential information unless required by law; nor use confidential or privileged information to his/her own advantage or that of a third person.

Note:
The archaeologist should also exercise care to prevent employees, colleagues, associates and helpers from revealing or using confidential information in these ways. Confidential information means information gained in the course of the project which the employer or client has for the time being requested be held inviolate, or the disclosure of which would be potentially embarrassing or detrimental to the employer or client. Information ceases to be confidential when the employer or client so indicates, or when such information becomes publicly known. Where specifically archaeological information is involved, it is however the responsibility of the archaeologist to inform the employer or client of any conflict with his/her own responsibilities under Principle 4 of the Code (dissemination of archaeological information) and to seek to minimise or remove any such conflict.

1.12 An archaeologist has a duty to ensure that this Code is observed throughout the membership of the Institute, and also to encourage its adoption by others (see note on Rule 1.12).

Note:
From time to time the Institute receives formal or informal complaints about members and allegations of breaches of its by-laws. An archaeologist’s duty to ensure that the Code
of conduct is observed includes providing information in response to a request from the Chair or a Vice Chair, and/or giving evidence to such panels and hearings as may be established for the purposes of investigating an alleged breach of the Institute’s by-laws. This requirement is without prejudice to the provisions of Rule 1.10 regarding confidential information.

1.13 An archaeologist shall ensure, as far as is reasonably practical, that all work for which he/she is directly or indirectly responsible by virtue of his/her position in the organisation undertaking the work, is carried out in accordance with this Code.

1.14 An archaeologist may find himself/herself in an ethical dilemma where he/she is confronted by competing loyalties, responsibilities or duties. In such circumstances an archaeologist shall act in accordance with the Principles of the Code of conduct.

Principle 2
The archaeologist has a responsibility for the conservation of the archaeological heritage.

Rules
2.1 An archaeologist shall strive to conserve archaeological sites and material as a resource for study and enjoyment now and in the future and shall encourage others to do the same. Where such conservation is not possible he/she shall seek to ensure the creation and maintenance of an adequate record through appropriate forms of research, recording and dissemination of results.

Note:
Dissemination in these rules is taken to include the deposition of primary records and unpublished material in an accessible public archive.

Note:
Particular attention should be paid to this injunction in the case of projects carried out for purposes of pure research. In all projects, whether prompted by pure research or the needs of rescue, consideration should be given to the legitimate interests of other archaeologists; for example, the upper levels of a site should be conscientiously excavated and recorded, within the exigencies of the project, even if the main focus is on the underlying levels.

2.3 An archaeologist shall ensure that the objects of a research project are an adequate justification for the destruction of the archaeological evidence which it will entail.

2.2 Where destructive investigation is undertaken the archaeologist shall ensure that it causes minimal attrition of the archaeological heritage consistent with the stated objects of the project.

Principle 3
The archaeologist shall conduct his/her work in such a way that reliable information about the past may be acquired, and shall ensure that the results be properly recorded.

Rules
3.1 The archaeologist shall keep himself/herself informed about developments in his/her field or fields of specialisation.

3.2 An archaeologist shall prepare adequately for any project he/she may undertake.
3.3 An archaeologist shall ensure that experimental design, recording, and sampling procedures, where relevant, are adequate for the project in hand. By-laws: Code of conduct

3.4 An archaeologist shall ensure that the record resulting from his/her work is prepared in a comprehensible, readily usable and durable form.

3.5 An archaeologist shall ensure that the record, including artefacts and specimens and experimental results, is maintained in good condition while in his/her charge and shall seek to ensure that it is eventually deposited where it is likely to receive adequate curatorial care and storage conditions and to be readily available for study and examination.

3.6 An archaeologist shall seek to determine whether a project he/she undertakes is likely detrimentally to affect research work or projects of other archaeologists. If there is such likelihood, he/she shall attempt to minimise such effects.

Note:
It is accepted that the movement of archaeologists from one employment to another raises problems of responsibility for the publication of projects. This ultimate responsibility for publication of a piece of work must be determined either by the contract of employment through which the work was undertaken, or by agreement with the original promoter of the work. It is the responsibility of the archaeologist, either as employer or employee, to establish a satisfactory agreement on this issue at the outset of work.

Principle 4
The archaeologist has responsibility for making available the results of archaeological work with reasonable dispatch.

Rules
4.1 An archaeologist shall communicate and cooperate with colleagues having common archaeological interests and give due respect to colleagues' interests in, and rights to information about sites, areas, collections or data where there is a shared field of concern, whether active or potentially so.

4.2 An archaeologist shall accurately and without undue delay prepare and properly disseminate an appropriate record of work done under his/her control.

Note:
Dissemination in these rules is taken to include the deposition of primary records and unpublished material in an accessible public archive.

This rule carries with it the implication that an archaeologist should not initiate, take part in or support work which materially damages the archaeological heritage unless reasonably prompt and appropriate analysis and reporting can be expected. Where results are felt to be substantial contributions to knowledge or to the advancement of theory, method or technique, they should be communicated as soon as reasonably possible to colleagues and others by means of letters, lectures, reports to meetings or interim publications, especially where full publication is likely to be significantly delayed.

4.3 An archaeologist shall honour requests from colleagues or students for information on the results of research or projects if consistent with his/her prior rights to publication and with his/her other archaeological responsibilities.
Archaeologists receiving such information shall observe such prior rights, remembering that laws of copyright may also apply.

4.4 An archaeologist is responsible for the analysis and publication of data derived from projects under his/her control. While the archaeologist exercises this responsibility he/she shall enjoy consequent rights of primacy. However, failure to prepare or publish the results within 10 years of completion of the fieldwork shall be construed as a waiver of such rights, unless such failure can reasonably be attributed to circumstances beyond the archaeologist's control.

4.5 An archaeologist, in the event of his/her failure to prepare or publish the results within 10 years of completion of the fieldwork and in the absence of countervailing circumstances, or in the event of his/her determining not to publish the results, shall if requested make data concerning the project available to other archaeologists for analysis and publication.

4.6 An archaeologist shall accept the responsibility of informing the public of the purpose and results of his/her work and shall accede to reasonable requests for information for dispersal to the general public.

Note: The archaeologist should be prepared to allow access to sites at suitable times and under controlled conditions, within limitations laid down by the funding agency or by the owners or the tenants of the site, or by considerations of safety or the well-being of the site.

4.7 An archaeologist shall respect contractual obligations in reporting but shall not enter into a contract which prohibits the archaeologist from including his/her own interpretations or conclusions in the resulting record, or from a continuing right to use the data after completion of the project.

Note: Adherence to this rule may on occasion appear to clash with the requirements of rule 1.10. A client employer may legitimately seek to impose whatever conditions of confidentiality he/she wishes. An archaeologist should not accept conditions which require the permanent suppression of archaeological discoveries or interpretations.

Principle 5
The archaeologist shall recognise the aspirations of employees, colleagues and helpers with regard to all matters relating to employment, including career development, health and safety, terms and conditions of employment and equality of opportunity.

Rules
5.1 An archaeologist shall give due regard to the requirements of employment legislation relating to employees, colleagues or helpers.

5.2 An archaeologist shall give due regard to the requirements of health and safety legislation relating to employees or to other persons potentially affected by his or her archaeological activities.
5.3 An archaeologist shall give due regard to the requirements of legislation relating to employment discrimination on grounds of race, sex or disability.

5.4 An archaeologist shall ensure that adequate insurance cover is maintained for persons or property which may be affected by his or her archaeological activities.

5.5 An archaeologist shall give due regard to the welfare of employees, colleagues and helpers in relation to terms and conditions of service. He or she shall give reasonable consideration to any recommended conditions of employment.

5.6 An archaeologist shall give reasonable consideration to cumulative service and proven experience of employees, colleagues or helpers when deciding rates of remuneration and other employment benefits, such as leave.

5.7 An archaeologist shall have due regard to the rights of individuals who wish to join or belong to a trade union, professional or trade association.

5.8 An archaeologist shall give due regard and appropriate support to the training and development of employees, colleagues or helpers to enable them to execute their duties.
Appendix 7.6 — RPA

Code of Conduct and Standards of Research Performance
(Source: /www.rpanet.org/)

Code of Conduct

Archaeology is a profession, and the privilege of professional practice requires professional morality and professional responsibility, as well as professional competence, on the part of each practitioner.

I. The Archaeologist's Responsibility to the Public

1.1 An archaeologist shall:

a. Recognize a commitment to represent Archaeology and its research results to the public in a responsible manner;
b. Actively support conservation of the archaeological resource base;
c. Be sensitive to, and respect the legitimate concerns of, groups whose culture histories are the subjects of archaeological investigations;
d. Avoid and discourage exaggerated, misleading, or unwarranted statements about archaeological matters that might induce others to engage in unethical or illegal activity;
e. Support and comply with the terms of the UNESCO Convention on the means of prohibiting and preventing the illicit import, export, and transfer of ownership of cultural property, as adopted by the General Conference, 14 November 1970, Paris.

1.2 An archaeologist shall not:

f. Engage in any illegal or unethical conduct involving archaeological matters or knowingly permit the use of his/her name in support of any illegal or unethical activity involving archaeological matters;
g. Give a professional opinion, make a public report, or give legal testimony involving archaeological matters without being as thoroughly informed as might reasonably be expected;
h. Engage in conduct involving dishonesty, fraud, deceit or misrepresentation about archaeological matters;
i. Undertake any research that affects the archaeological resource base for which she/he is not qualified.

II. The Archaeologist's Responsibility to Colleagues, Employees, and Students

2.1 An archaeologist shall:

a. Give appropriate credit for work done by others;
b. Stay informed and knowledgeable about developments in her/his field or fields of specialization;
c. Accurately, and without undue delay, prepare and properly disseminate a description of research done and its results;
d. Communicate and cooperate with colleagues having common professional interests;

e. Give due respect to colleagues' interests in, and rights to, information about sites, areas, collections, or data where there is a mutual active or potentially active research concern;

f. Know and comply with all federal, state, and local laws, ordinances, and regulations applicable to her/his archaeological research and activities;

g. Report knowledge of violations of this Code to proper authorities.

h. Honor and comply with the spirit and letter of the Register of Professional Archaeologist's Disciplinary Procedures.

2.2 An archaeologist shall not:

i. Falsely or maliciously attempt to injure the reputation of another archaeologist;

j. Commit plagiarism in oral or written communication;

k. Undertake research that affects the archaeological resource base unless reasonably prompt, appropriate analysis and reporting can be expected;

l. Refuse a reasonable request from a qualified colleague for research data;

m. Submit a false or misleading application for registration by the Register of Professional Archaeologists.

III. The Archaeologist's Responsibility to Employers and Clients

3.1 An archaeologist shall:

a. Respect the interests of her/his employer or client, so far as is consistent with the public welfare and this Code and Standards;

b. Refuse to comply with any request or demand of an employer or client which conflicts with the Code and Standards;

c. Recommend to employers or clients the employment of other archaeologists or other expert consultants upon encountering archaeological problems beyond her/his own competence;

d. Exercise reasonable care to prevent her/his employees, colleagues, associates and others whose services are utilized by her/him from revealing or using confidential information. Confidential information means information of a non-archaeological nature gained in the course of employment which the employer or client has requested be held inviolate, or the disclosure of which would be embarrassing or would be likely to be detrimental to the employer or client. Information ceases to be confidential when the employer or client so indicates or when such information becomes publicly known.

3.2 An archaeologist shall not:

e. Reveal confidential information, unless required by law;

f. Use confidential information to the disadvantage of the client or employer;

g. Use confidential information for the advantage of herself/himself or a third person, unless the client consents after full disclosure;
h. Accept compensation or anything of value for recommending the employment of another archaeologist or other person, unless such compensation or thing of value is fully disclosed to the potential employer or client;

i. Recommend or participate in any research which does not comply with the requirements of the Standards of Research Performance.

Standards of Research Performance

The research archaeologist has a responsibility to attempt to design and conduct projects that will add to our understanding of past cultures and/or that will develop better theories, methods, or techniques for interpreting the archaeological record, while causing minimal attrition of the archaeological resource base. In the conduct of a research project, the following minimum standards should be followed:

I. The archaeologist has a responsibility to prepare adequately for any research project, whether or not in the field. The archaeologist must:

1.1 Assess the adequacy of her/his qualifications for the demands of the project, and minimize inadequacies by acquiring additional expertise, by bringing in associates with the needed qualifications, or by modifying the scope of the project;

1.2 Inform herself/himself of relevant previous research;

1.3 Develop a scientific plan of research which specifies the objectives of the project, takes into account previous relevant research, employs a suitable methodology, and provides for economical use of the resource base (whether such base consists of an excavation site or of specimens) consistent with the objectives of the project;

1.4 Ensure the availability of adequate and competent staff and support facilities to carry the project to completion, and of adequate curatorial facilities for specimens and records;

1.5 Comply with all legal requirements, including, without limitation, obtaining all necessary governmental permits and necessary permission from landowners or other persons;

1.6 Determine whether the project is likely to interfere with the program or projects of other scholars and, if there is such a likelihood, initiate negotiations to minimize such interference.

II. In conducting research, the archaeologist must follow her/his scientific plan of research, except to the extent that unforeseen circumstances warrant its modification.

III. Procedures for field survey or excavation must meet the following minimal standards:

3.1 If specimens are collected, a system for identifying and recording their proveniences must be maintained.

3.2 Uncollected entities such as environmental or cultural features, depositional strata, and the like, must be fully and accurately recorded by appropriate means, and their location recorded.

3.3 The methods employed in data collection must be fully and accurately
described. Significant stratigraphic and/or associational relationships among artifacts, other specimens, and cultural and environmental features must also be fully and accurately recorded.

3.4 All records should be intelligible to other archaeologists. If terms lacking commonly held referents are used, they should be clearly defined.

3.5 Insofar as possible, the interests of other researchers should be considered. For example, upper levels of a site should be scientifically excavated and recorded whenever feasible, even if the focus of the project is on underlying levels.

IV. During accessioning, analysis, and storage of specimens and records in the laboratory, the archaeologist must take precautions to ensure that correlations between the specimens and the field records are maintained, so that provenience contextual relationships and the like are not confused or obscured.

V. Specimens and research records resulting from a project must be deposited at an institution with permanent curatorial facilities, unless otherwise required by law.

VI. The archaeologist has responsibility for appropriate dissemination of the results of her/his research to the appropriate constituencies with reasonable dispatch.

6.1 Results reviewed as significant contributions to substantive knowledge of the past or to advancements in theory, method or technique should be disseminated to colleagues and other interested persons by appropriate means such as publications, reports at professional meetings, or letters to colleagues.

6.2 Requests from qualified colleagues for information on research results directly should be honored, if consistent with the researcher's prior rights to publication and with her/his other professional responsibilities.

6.3 Failure to complete a full scholarly report within 10 years after completion of a field project shall be construed as a waiver of an archaeologist's right of primacy with respect to analysis and publication of the data. Upon expiration of such 10-year period, or at such earlier time as the archaeologist shall determine not to publish the results, such data should be made fully accessible to other archaeologists for analysis and publication.

6.4 While contractual obligations in reporting must be respected, archaeologists should not enter into a contract which prohibits the archaeologist from including her or his own interpretations or conclusions in the contractual reports, or from a continuing right to use the data after completion of the project.

6.5 Archaeologists have an obligation to accede to reasonable requests for information from the news media
Appendix 7.7 — The Conservator-Restorer: a Definition of the Profession
(Source: ICOM-CC http://icom-cc.icom.museum/About/DefinitionOfProfession/)

Foreword

This document is based on a text prepared in German by Agnes Ballestrem which was submitted by her as a working paper to the ICCROM Standards and Training Committee at its November 1978 meeting (ST 1/3). The Working Group for Training in Conservation and Restoration of the ICOM Committee for Conservation discussed the document for the first time at its meeting in Zagreb in 1978. A revised version was published in the pre-prints of the ICOM Committee for Conservation’s triennial meeting in Ottawa, Canada in 1981, paper 81/22/0 with an introduction by H.C. von Imhoff. Eleanor McMillan and Paul N. Perrot rewrote it. The new version was presented and, with minor amendments, was unanimously adopted during the interim meeting of the Working Group for Training in Conservation and Restoration held in Dresden on 5 September 1983 and was submitted to the Committee’s Directory Board at its meeting in Barcelona on 26 November 1983. The Directory Board requested further work on the wording of the Definition before the Working Group was to present it to the full Committee at its triennial meeting in Copenhagen in September 1984. This latest version is the result of revisions done by Ray Isar, Janet Bridgland and Christoph von Imhoff between November 1983 and August 1984.

1. Introduction

1.1 The purpose of this document is to set forth the basic purposes, principles, and requirements of the conservation profession.

1.2 In most countries, the profession of the conservator-restorer (1) is still undefined: whosoever conserves and restores is called a conservator or a restorer, regardless of extent and depth of training.

1.3 Concern for professional ethics and standards for the objects being treated and for the owners of these objects, has led to various attempts to define the profession, to distinguish it from related professions (2), and to establish proper training requirements. Other professions, such as those of physician, lawyer and architect, have passed through a phase of self-examination and definition and have established widely accepted standards. Such definition of the profession of conservator-restorer is now overdue. It should help the profession to achieve parity in status with disciplines such as those of the curator or the archaeologist.

2. The activity of the Conservator-Restorer

2.1 The activity of the conservator-restorer (conservation) consists of technical examination, preservation, and conservation-restoration of cultural property: Examination is the preliminary procedure taken to determine the documentary significance of an artefact; original structure and materials; the extent of its deterioration, alteration, and loss; and the documentation of these findings. Preservation is action taken to retard or prevent deterioration of or damage to cultural properties by control of their environment and/or treatment of their structure in order to maintain them as nearly as possible in an unchanging state. Restoration is action taken to make a deteriorated or damaged artefact understandable, with minimal sacrifice of aesthetic and historic integrity.
2.2 Conservator-restorer work in museums, in official heritage protection services, in private conservation enterprises or independently. Their task is to comprehend the material aspect of objects of historic and artistic significance in order to prevent their decay and to enhance our understanding of them so as further the distinction between what is original and what is spurious.

3. The Impact and Ranking of the Activities of the Conservator-Restorer

3.1 The conservator-restorer has a particular responsibility in that treatment is performed on irreplaceable originals, which are often unique and of great artistic, religious, historic, scientific, cultural, social or economic value. The value of such objects lies in the character of their fabrication, in their evidence as historical documents, and consequently in their authenticity. The objects “are a significant expression of the spiritual, religious, and artistic life of the past, often documents of a historical situation, whether they be work of the first rank or simply objects of everyday life” (3).

3.2 The documentary quality of the historic object is the basis for research in art history, ethnography, archaeology, and in other scientifically based disciplines. Hence, the importance of preserving their physical integrity.

3.3 Because the risk of harmful manipulation or transformation of the object is inherent in any measure of conservation or restoration, the conservator-restorer must work in the closest co-operation with the curator or other relevant scholar. Together they must distinguish between the necessary and the superfluous, the possible and the impossible, the intervention that enhances the qualities of the object and that which is detrimental to its integrity.

3.4 The conservator-restorer must be aware of the documentary nature of an object. Each object contains - singly or combined - historic, stylistic, iconographic, technological, intellectual, aesthetic and/or spiritual messages and data. Encountering these during research and work on the object, the conservator-restorer should be sensitive to them, be able to recognise their nature, and be guided by them in the performance of his task.

3.5 Therefore, all interventions must be proceeded by a methodical and scientific examination aimed at understanding the object in all its aspects, and the consequences of each manipulation must be fully considered. Whoever, for lack of training, is unable to carry out such examinations or whoever, for lack of interest or other reason neglects to proceed in this way cannot be entrusted with the responsibility for treatment. Only a well-trained experienced conservator-restorer can correctly interpret the results of such examinations and foresee the consequences of the decisions made.

3.6 An intervention on an historic or artistic object must follow the sequence common to all scientific methodology: investigation of source, analysis, interpretation and synthesis. Only then can the completed treatment preserve the physical integrity of the object, and make its significance accessible. Most importantly, this approach enhances our ability to decipher the object’s scientific message and thereby contribute new knowledge.

3.7 The conservator-restorer works on the object itself. His work, like that of the surgeon, is above all a manual art/skill. Yet, as in the case of the surgeon, manual skill must be linked to theoretical knowledge and the capacity simultaneously to assess a situation, to act upon it immediately and to evaluate its impact.
3.8 Interdisciplinary co-operation is of paramount importance, for today the conservator-restorer must work as part of a team. Just as the surgeon cannot be simultaneously a radiologist, pathologist and psychologist, the conservator-restorer cannot be an expert in art or cultural history, chemistry, and/or other natural or human sciences. Like that of the surgeon, the work of the conservator-restorer can and should be complemented by the analytical and research findings of scholars. Such co-operation will function well if the conservator-restorer is able to formulate his questions scientifically and precisely, and to interpret the answers in the proper context.

4. Distinction from Related Professions
4.1 The conservator-restorer's professional activities are distinct from those of the artistic or craft professions. A basic criterion of this distinction is that, by their activities, conservator-restorers do not create new cultural objects. It is the province of the craft and artistic professions such as metal-smiths, gilders, cabinet-makers, decorators, and others to reconstruct physically what no longer exists or what cannot be preserved. However, they too can benefit immeasurably from the findings of conservator-restorers, and from their guidance.

4.2 The recommendation as to whether intervention on any object of historic and/or artistic significance should be undertaken by an artist, a craftsman, or a conservator-restorer can be made only by a well trained, well educated, experienced and highly sensitive conservator-restorer. This individual alone, in concert with the curator or other specialist, has the means to examine the object, determine its condition, and assess its material documentary significance.

5. Training and Education of the Conservator-Restorer
5.1 To conform to the above professional characteristics and specifications, conservator-restorer must receive artistic, technical and scientific training based upon a well rounded, general education.

5.2 Training should involve the development of sensitivity and manual skill, the acquisition of theoretical knowledge about materials and techniques, and rigorous grounding in scientific methodology to foster the capacity to solve conservation problems by following a systematic approach, using precise research and critically interpreting the results.

5.3 Theoretical training and education should include the following subjects:

- History of art and civilisations;
- Methods of research and documentation;
- Knowledge of technology and materials;
- Conservation theory and ethics;
- Conservation-restoration history and technology;
- Chemistry, biology and physics of deterioration processes and of conservation methods.

5.4 It is understood that an internship is an essential part of any training programme. A thesis or diploma paper should terminate training, and its completion recognised by the equivalent of a university graduate degree.
5.5 At all stages in this training, major emphasis should be placed on practice, but sight should never be lost of the need to develop and sharpen an understanding of technical, scientific, historical, and aesthetic factors. The ultimate aim of training is to develop thoroughly rounded professionals, able thoughtfully to perform highly complex conservation interventions and to thoroughly document them in order that the work and the records contribute not only to preservation but to a deeper understanding of historical and artistic events related to the objects under treatment.

Copenhagen, September 1984 © ICOM Committee for Conservation

(1) This term is used throughout this text, as a compromise, since the same professional is called, “conservator” in the English speaking countries, and “restorer” in those where Romance and Germanic languages are spoken.

(2) Certain professions related to conservation, Conservation Architects, Scientists, and Engineers, and all other who contribute to conservation, are not mentioned in this document since they are already governed by accepted professional standards.

Appendix 7.8 – The Society for Historical Archaeology
Ethical Principles and Standards and Guidelines for Curation

Adopted 21 June 2003
(Source: http://www.sha.org/About/ethics.htm)

Historical archaeologists study, interpret and preserve archaeological sites, artifacts and documents from or related to literate societies over the past 600 years for the benefit of present and future peoples. In conducting archaeology, individuals incur certain obligations to the archaeological record, colleagues, employers and the public. These obligations are integral to professionalism. This document presents ethical principles for the practice of historical archaeology. All members of The Society for Historical Archaeology, and others who actively participate in society-sponsored activities, shall support and follow the ethical principles of the society. All historical archaeologists and those in allied fields are encouraged to adhere to these principles.

Principle 1
Members of the Society for Historical Archaeology have a duty to adhere to professional standards of ethics and practices in their research, teaching, reporting, and interactions with the public.

Principle 2
Members of the Society for Historical Archaeology have a duty to encourage and support the long-term preservation and effective management of archaeological sites and collections, from both terrestrial and underwater contexts, for the benefit of humanity.

Principle 3
Members of the Society for Historical Archaeology have a duty to disseminate research results to scholars in an accessible, honest and timely manner.

Principle 4
Members of the Society for Historical Archaeology have a duty to collect data accurately during investigations so that reliable data sets and site documentation are produced, and to see that these materials are appropriately curated for future generations.

Principle 5
Members of the Society for Historical Archaeology have a duty in their professional activities to respect the dignity and human rights of others.

Principle 6
Items from archaeological contexts shall not be traded, sold, bought or bartered as commercial goods, and it is unethical to take actions for the purpose of establishing the commercial value of objects from archaeological sites or property that may lead to their destruction, dispersal, or exploitation.

Principle 7
Members of the Society for Historical Archaeology encourage education about archaeology, strive to engage citizens in the research process and publicly disseminate the major findings of their research, to the extent compatible with resource protection and legal obligations.
STANDARDS AND GUIDELINES FOR THE CURATION OF ARCHAEOLOGICAL COLLECTIONS
(Source: SHA 1993)

INTRODUCTION

Archaeologists have an ethical obligation to preserve the data they collect during archaeological projects for future generations. The following standards and guidelines were developed by The Society for Historical Archaeology with the explicit goals of permitting the long-term preservation of archaeological collections and maintaining their research and public education values. These SHA standards are in accordance with the more general federal regulations issued as 36 CFR Part 79: Curation of Federally-Owned and Administered Archaeological Collections. For the purposes of archaeological curation, the following terms are employed:

- **Archaeological Collections** are comprised of several components, including but not limited to artifacts, environmental and dating samples, field documentation, laboratory documentation, photographic records, related historical documents, and reports.

- **Curation** is an integral element of the archaeological process and refers to the long-term management and preservation of archaeological materials and their associated documentation.

- **Curation Facility** is a designated repository for archaeological materials, which can provide accountable, professional curation of collections in a secure, climate-controlled environment on long-term basis.

Due to its significance, planning for curation should begin in the project design phase through consultation with the curatorial facility, which will ultimately receive the collection. Curation expenses and storage fees must be considered in the preparation of project budgets.

RECOMMENDATIONS

The following recommendations for the processing and storage of archaeological materials represent the minimum standards, which are essential if our professional responsibility to preserve archaeological collections for the future is to be realized.

1. **Artifact Cleaning**

All artifacts should be cleaned unless this will harm the object or result in the loss of potential data (i.e., blood-residue analysis). Cleaning is necessary for the accurate identification and study of most artifact types. Appropriate cleaning procedures depend upon the type and condition of the material. Due care must be exercised during the cleaning process to insure that the integrity and information value of the object is maintained.

2. **Artifact Labeling**

2a. Artifacts must be labeled in such a way that the site and intrasite provenience data are retrievable. Labeling must be done in a permanent and archivally stable manner. Where
direct labeling on the object is not feasible, other archivally stable methods of permanently maintaining the relationship between an artifact and its provenience may be used (i.e., string tags with acid-free paper for beads).

2b. All diagnostic artifacts must be labeled whenever physically possible. If not appropriate, the object must be packaged in archivally stable materials, which are permanently labeled.

2c. When certain less-diagnostic artifact types occur in large quantities within a specific provenience, all specimens need not be individually labeled. Examples include but are not limited to slag, shell, fire cracked rocks, flakes, window glass, brick, mortar, plaster, and coal (exceptions should include unusual specimens or those of particular research potential). These artifacts may be grouped by material type and placed in a resealable plastic bag with the exterior permanently labeled. In the bag with less diagnostic artifacts, a Mylar or an acid-free paper slip labeled with the provenience information must be included. Other material classes not appropriate for individual labeling (i.e., floral remains, soil samples) should be stored in suitable labeled containers with a labeled Mylar strip placed inside.

2d. All faunal material, which can be physically labeled, should be labeled. Bones too small for individual marking should be placed in a labeled, resealable plastic bag. It is recommended that bones within a provenience unit be bagged separately by zoological class to prevent or reduce the crushing of fragile remains.

2e. An explanation of the label information, including locational data about the excavation units, must be submitted with the collection. It is suggested that one copy be stored with the site artifacts and one with the documentation.

3. STORAGE

3a. The most suitable artifact storage container currently available is the polyethylene, zip-lock-type plastic bag. Unless the curation facility requires a different container, these should be used. Paper bags and polyethylene bags of less than 2 mm thickness are not acceptable for permanent curation. Exceptionally large or unusually shaped artifacts may require different methods but should be stored using archivally stable materials. Bags should be perforated to allow air exchange and inhibit the development of unwanted microenvironments. Use of unperforated bags, however, may sometimes be appropriate for very climate-sensitive artifacts, which need special storage conditions, such as iron.

3b. It is recommended that all bags be permanently labeled with the appropriate site and provenience information. For certain fragile or sensitive materials (i.e., C14 samples or floral remains), standard-sized glass or other archivally stable containers labeled with the provenience data are recommended.

3c. Artifact storage boxes must be made of archivally stable materials and standard sized. The curation repository will determine the specific type. Consultation with the curation facility before containers are purchased is highly recommended. Artifacts must be packed in such a way as to avoid crushing or otherwise damaging them. It is also mandatory that all packing materials be archivally stable.

3d. All storage containers must be labeled with the site and provenience information. Rather than direct marking of the box, a transparent label holder affixed to the container is suggested. Listing the contents of the box may be appropriate.
3e. If storage is to be by provenience unit, certain artifact classes (i.e., ceramic vessels, bottles) should be retained in their analytic categories. They should not be disassembled nor the sherds returned to their original provenience for storage. Notation should be made in the provenience-unit documentation that these artifacts are stored elsewhere.

3f. All slides, black-and-white negatives, and prints are to be stored in archivally stable materials.

4. DOCUMENTATION

Records, notes, reports, catalogs, related historical documents, and photographs are integral components of an archaeological collection. They must be submitted with the artifacts for permanent curation. Two copies of all records are recommended. Paper documentation should be on acid-free paper. Readable copies reproduced by a heat fusion process (e.g., photocopy) are acceptable. Documentation must include the following:

- Ownership document (legal title) for archaeological materials with a complete listing of all components of the collection including the number of containers, their contents and associated provenience units, and all accompanying documentation.

- Catalog of the artifacts by provenience unit, recognizing that there are different levels of cataloging. At a minimum, catalogs must include an identification of the object, material of manufacture, and quantification (count and/or weight).

- Description of the artifact according to the best current levels of professional knowledge is recommended where possible. Notation regarding artifacts stored outside of their provenience unit should be included.

- Copy of the final report, site location data, project scope of work, and any relevant historical documentation pertaining to the site.

- Statement indicating whether conservation treatment was performed, a list of those objects treated, and a complete description of the treatments used. If conservation was not complete, a list of those objects requiring immediate attention must be included.

- Archivally stable photocopy of all original field and laboratory documentation.

- Master set of permanent black-and-white photographs, negatives, color slides, and videotapes using the best current standard films and papers. Slides should be unprojected originals or copies. All photographic material should be minimally labeled with the site, provenience, and catalog number using archivally stable methods.

- Catalog of all photographic materials describing the images.

- Electronic data (i.e., tape, disks) may accompany the documentation and must be accompanied by a by a statement describing the system and software used and the content of each disk, tape, etc. Standardized methods for the storage of electronic
data will likely be developed in the future.

5. Conservation

5a. All archaeological excavation carries the professional obligation to preserve the materials recovered through both proper curation and appropriate conservation treatments. Conservation of perishable material is an ethical responsibility and an essential element in the archaeological process. Project design should include a consideration of conservation needs and the funding requirements for this essential service.

5b. Conservation is especially critical for underwater sites of all kinds and can cost up to twice the expense of the fieldwork. Excavation of an underwater site must not be undertaken without conservation facilities established beforehand and adequate funding for conservation dedicated to the project.

5c. Conservation treatments must be appropriate to the artifact’s material and its condition, and should reflect the best current standards in methodology and materials. All treatments must be carried out by or under the supervision of an adequately trained professional. All treatments must be fully documented. This documentation must form a part of the site’s permanent archive.

5d. The decision to conserve any artifact or class of artifacts is a complex one. It may reflect, in different cases, the condition, uniqueness, research potential, or the exhibit potential of an artifact. It may also reflect the availability of long-term storage under controlled environmental conditions and the degree to which those conditions may be achieved and precisely controlled. Consultation with the curation facility regarding this subject is strongly recommended.

6. Curation Facility

6a. Repositories used for the permanent curation of archaeological collections must provide, at a minimum, (1) physical security, (2) climate control, (3) fire suppression, (4) collection monitoring, and (5) access by qualified researchers. These requirements demand adequate space and resources dedicated to the purpose of curation. Curation space within a repository must be organized to allow controlled access, efficient collection retrieval, and optimum preservation. A professional staff, safe and secure storage, effective fire protection, disaster and pest management plans are essential. Collections should be isolated from work areas and people to the extent possible.

6b. For many historic artifacts, climate control is crucial to reduce their rate of deterioration and minimize the need for conservation treatment. Relative humidity (RH) and temperature must be continually monitored and controlled to minimize harmful fluctuations. Control of light levels, especially ultraviolet (UV) radiation is also needed. Regular inspection to detect insect, rodent, or other biological problems; assess structural defects in the physical plant; and monitor the condition of the artifacts is essential. Specific guidelines for humidity, temperature, and light control are as follows:

Curation Facility (cont.)

- Relative Humidity: Due to the extreme sensitivity of many artifacts to RH, control of RH is crucial. For most objects, RH should be kept between 40–60% with monthly fluctuations of less than 5%. Iron and some other materials require
much lower RH levels for long-term preservation.

- **Temperature:** Normally, lower temperatures are better for artifact curation because chemical and biological activity increases with higher temperatures. In areas where people are present, the temperature should remain between 65° F and 70° F. For storage spaces where people are seldom present, temperatures in the 40° F to 60° F range are desirable. Temperatures in a collections area should never exceed 75° F. Abrupt changes in temperature, which put great stress on artifacts, must be prevented.

- **Light (UV Radiation):** Light levels in collections should not exceed 150 lux (15 footcandles). Control of UV radiation is necessary to protect containers and their labels from deterioration. All light sources should be filtered for UV radiation.

6c. Where possible, the repository selected for curation should be in the same state as the site or in a facility that stores materials from the same region. Preference should be given to a facility that curates other collections from the same site or site area.

7. **DEACCESSIONING**

7a. The discarding of archaeological materials by a curation facility is **not** recommended because discard or deaccessioning can jeopardize the ability to study the primary site data, particularly because current levels of knowledge may not adequately recognize the research value of certain artifact classes. Exceptions are live ammunition, toxic or radioactive materials, and other hazardous substances. However, deactivation of historic ammunition rather than discard is suggested to preserve this often-rare material culture.

7b. In decisions regarding any deaccessioning, materials recovered from good archaeological contexts should be given the greatest priority for retention. First, effort should be made to find a repository that will accept material to be deaccessioned. If unsuccessful, placement in a stable environmental setting, which permits later retrieval of the material, is strongly encouraged. Decisions about any deaccessioning of archeological materials should be made by or in consultation with professional archaeologists. Any deaccessioning must be fully documented, including a thorough description of the material, the procedures used for selection of the artifacts, the sampling techniques employed, and the final destination of the material. This additional documentation must be filed with the primary site documentation. Adequate samples should be retained of any material classes that are deaccessioned. Defining what is an adequate sample will vary by material and should take into account the range of variation within a particular artifact class.

8. **HUMAN REMAINS**

Archaeologists can encounter human remains during, and these materials may be curated. All human remains must be treated in a dignified manner and with respect for the deceased individuals. Due to the wide range of potential situations, specific treatment and the ultimate deposition of human remains must be handled case by case and in accordance with applicable laws and religious traditions.

Printed in The Society for Historical Archaeology Newsletter (vol. 26, no. 4) December 1993.
## Appendix 8 – Participants Interviewed

<table>
<thead>
<tr>
<th>Location</th>
<th>Discipline</th>
<th>Country of Training</th>
<th>Country of Origin</th>
<th>Setting</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case One</td>
<td>Archaeologist</td>
<td>UK</td>
<td>UK</td>
<td>Office on site</td>
<td>Female</td>
</tr>
<tr>
<td>Case One</td>
<td>Conservator</td>
<td>UK</td>
<td>Turkey</td>
<td>Conservation lab on site</td>
<td>Female</td>
</tr>
<tr>
<td>Case One</td>
<td>Conservator</td>
<td>UK</td>
<td>US</td>
<td>Excavation trench</td>
<td>Female</td>
</tr>
<tr>
<td>Case One</td>
<td>Archaeologist</td>
<td>UK</td>
<td>US</td>
<td>Excavation trench</td>
<td>Female</td>
</tr>
<tr>
<td>Case One</td>
<td>Archaeologist</td>
<td>Turkey</td>
<td>Turkey</td>
<td>Office on site</td>
<td>Female</td>
</tr>
<tr>
<td>Case One</td>
<td>Archaeologist</td>
<td>UK</td>
<td>UK</td>
<td>Office on site</td>
<td>Female</td>
</tr>
<tr>
<td>Case Two</td>
<td>Conservator</td>
<td>Canada</td>
<td>Canada</td>
<td>Conservation lab on site</td>
<td>Female</td>
</tr>
<tr>
<td>Case Two</td>
<td>Archaeologist</td>
<td>US</td>
<td>US</td>
<td>Office on site</td>
<td>Male</td>
</tr>
<tr>
<td>Case Two</td>
<td>Archaeologist</td>
<td>US</td>
<td>US</td>
<td>Excavation trench</td>
<td>Female</td>
</tr>
<tr>
<td>Case Two</td>
<td>Archaeologist</td>
<td>US</td>
<td>US</td>
<td>Archaeology lab on site</td>
<td>Male</td>
</tr>
<tr>
<td>Case Two</td>
<td>Database Administrator</td>
<td>Unknown</td>
<td>US</td>
<td>Office on site</td>
<td>Female</td>
</tr>
<tr>
<td>Other</td>
<td>Conservator</td>
<td>US</td>
<td>US</td>
<td>Conference</td>
<td>Female</td>
</tr>
<tr>
<td>Other</td>
<td>Conservator</td>
<td>US</td>
<td>US</td>
<td>Office off site</td>
<td>Female</td>
</tr>
<tr>
<td>Other</td>
<td>Archaeologist</td>
<td>US</td>
<td>US</td>
<td>Office off site</td>
<td>Male</td>
</tr>
<tr>
<td>Other</td>
<td>Conservator</td>
<td>US</td>
<td>US</td>
<td>Office off site</td>
<td>Female</td>
</tr>
<tr>
<td>Other</td>
<td>Conservator</td>
<td>US</td>
<td>US</td>
<td>Conference</td>
<td>Male</td>
</tr>
<tr>
<td>Other</td>
<td>Conservator</td>
<td>US</td>
<td>US</td>
<td>Conference</td>
<td>Female</td>
</tr>
</tbody>
</table>
## Appendix 9 – Risk Concepts

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
<th>Code Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCIDENT (accidents, disasters)</td>
<td>An event occurring by chance or unintentionally; a sudden or great misfortune.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>BENEFIT</td>
<td>A future advantage.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>CAUTION (care or caution)</td>
<td>Prudent forethought.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>CERTAIN, (certainty/uncertainty, absolutes, assurance, doubt, definite/indefinite, ensure, insure )</td>
<td>Assured in mind or action; firmly established; undoubted/doubted, guarantee.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>CONCERN (fear, worry, concern)</td>
<td>Anxiousness; disquiet, unease.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>DAMAGE (damaging, demolishing, destroying, disintegrating, losing, obliterating, adverse effects, deleterious)</td>
<td>Putting an end to; failing to keep or maintain; acting against or in a contrary or unfavorable direction.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>DANGER (danger/endangering, threat, risk, hazard, vulnerable, susceptible)</td>
<td>Exposure or liability to injury, harm, having an uncertain chance of continued survival; exposed, prone, liable or capable of being harmed.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>FUTURE</td>
<td>Coming after the present.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>LOSS</td>
<td>Decrease in amount or degree.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>OPPORTUNITY</td>
<td>A favorable combination of circumstances, time, and place.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>POSSIBLE (possibility, feasibility, potential)</td>
<td>Something may or may not occur.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>PREDICT</td>
<td>Declaring in advance.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>PRESERVE</td>
<td>To keep safe.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>PREVENTION</td>
<td>taking advance measures.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>PROBABLE (probability, likelihood, chance)</td>
<td>The likelihood of a particular outcome in an uncertain situation.</td>
<td>Certainty or Uncertainty</td>
</tr>
<tr>
<td>PROBLEM (problems, challenges difficulty/ease, impediments, dilemma)</td>
<td>A question raised for consideration or solution; something difficult to solve or decide; obstacles; an undesirable or unpleasant choice or situation.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>PROTECTION (preventing, protecting, defending, safeguard)</td>
<td>To keep from happening or existing to shield from injury, guard ; to repel danger.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>SAFETY (secure, safe)</td>
<td>Free from harm or risk; secure from danger, loss, or destruction.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>SAVING (save, salvage)</td>
<td>to guard from loss, rescue.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>STABLE</td>
<td>Unchanging, lasting, permanent.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>SURVIVE</td>
<td>Remaining in existence.</td>
<td>Harm or Potential harm</td>
</tr>
<tr>
<td>TRY (attempting or trying)</td>
<td>Making an effort toward an outcome.</td>
<td>Certainty or Uncertainty</td>
</tr>
</tbody>
</table>