

**BEYOND FUR TRADE:
THE EIGHTEENTH CENTURY COLONIAL ECONOMY OF FRENCH
NORTH AMERICA AS SEEN FROM FORT DE CHARTRES IN THE
ILLINOIS COUNTRY**

by
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ABSTRACT

This study challenges the assumption that a fur trade economy structured the colonial empire created by the French in the eighteenth century. Artifact assemblages from Forts de Chartres, Ouiatenon, and Michilimackinac are compared. Fort construction techniques are discussed in reference to the colonial economy and social structure. In addition settlement pattern data from these three forts and from the Fortress of Louisbourg and the settlement of Port Royal in Nova Scotia are compared. Finally, a new model is proposed to explain the variation observed between these settlements.

In this new model, frontier outposts and settlement are seen as part of a system of *entrepots*. These *entrepots* are at the center of local economies that can be characterized as either economies of extraction or economies of production. Fur trade, cod fishing, and mining are examples of economies of extraction, whereas farming and animal husbandry are considered economies of production.

The local economic system is reflected in three areas- the artifact assemblage, the architecture of the fort at the center of the entrepot system, and the regional pattern of settlement. Fort de Chartres in the Illinois Country is a classic example of an *entrepot* in a local economy of production. Forts Michilimackinac and Ouiatenon are examples of *entrepots* in local economies of extraction. Archaeological data and documentary information supports this conclusion.

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to a new level.

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CHAPTER ONE

INTRODUCTION

When I first began the research for this study there was a Plenary Session at the 1987 Meeting of the Society of Historical Archaeology that featured a number of papers assessing the present state of archaeology on historic sites. In one of the most notable assessments, Charles Cleland, bemoaned the lack of theory building in the discipline. "Historical archaeologists," he states, "have been diverted from real intellectual achievements by a fascination for the particular and the idiosyncratic" (1988:14).

He states further that, in spite of an 'impressive start' marked by Stanley South's ***Method and Theory in Historical Archaeology*** (1977), and Robert Schuyler's ***Historical Archaeology: A Guide to Substantive and Theoretical Contributions*** published the following year, much descriptive work continues on historic period sites, very little of which can fairly be described as theoretical (Cleland 1988:13).

Cleland pointed to a persistent problem that generated an identity crisis in Historic Archaeology in these early years. The problem had its origin in a debate over the purpose behind excavating historic sites. Many scholars considered historic archaeology an ancillary discipline to history: it served to fill in gaps in the documentary record (Noel Hume 1964; 1968:18; 1982; Harrington 1978). Others criticized this approach as particularistic (South 1977a:8; Binford 1977; 1978:248) and desired to see historical archaeology move in the same direction that prehistoric archaeology has been moving in the two preceding decades. They called for a more rigorous scientific approach that involved the testing of research hypotheses and a focus on culture process (Schuyler 1972; South 1977a; 1977b; Cleland and Fitting 1978).

In an attempt to make historic archaeology more scientific and to conform with the theoretical approaches utilized in prehistoric studies, particularly the study of culture process, Stanley South (1977; 1978) introduced a method of organizing archaeological data from historic sites that he called "pattern recognition."

The key to understanding culture process rests in pattern recognition. Once pattern is recognized, the archaeologist can then ask why the pattern exists, why it is often so predictive it can be expressed as laws. In so doing, he can begin to build a theory for explaining the demonstrated pattern (South 1977:31).

Pattern recognition required two steps: the organization of artifacts into a classificatory hierarchy and quantification for statistical analysis.

But in his remarks at the 1987 Plenary Session, Stanley South concurred with Cleland. South claimed that the pattern recognition system he introduced in 1977 in order to generate explanatory models has been used for particularistic purposes, mainly to identify and label artifacts (1988:25). He suggests that historical archaeologists investigate the World System approach as utilized by Wallerstein (1974), Wolf (1982) and others to generate research questions and restore pattern recognition studies as a tool in theory building.

During the decade and a half in which I worked on these issues

for this thesis archaeological studies on historic sites had taken some new directions - particularly in the area of examining archaeological data in relationship to larger economic structures. Taking up the challenge issued by Cleland and South in 1987, archaeologists working on historic sites started applying concepts developed in other disciplines to studies of historic sites. Some of the most creative work has been done by historic archaeologists using the Marxists' critiques of the capitalist economy.

A number of archaeologists have found Karl Marx's model of society useful in organizing material recovered from archaeological sites and explaining how these materials reflect the social and economic relationships between the individuals and groups that occupied these sites. The collection of articles in ***Historical Archaeologies of Capitalism*** (Leone and Potter 1999) are of some interest to the present study. By moving beyond information available in historic documents and borrowing ideas from economics and sociology, the contributors to the volume have introduced a number of strategies to examine archaeological remains in relationship to class structure in the

eighteenth and nineteenth centuries.

In this dissertation I have chosen a different approach. In reading economic history it appeared that the material I had to work with best represented the emerging market economies. Consequently, I focused on the works of Innes (1995), Perkins (1988), Mintz (1985), and Stein (1980; 1983; 1988). These works focused on the relationship between government policies, the growth of markets, and the quest for empire. Much of this will be discussed later in this study.

Despite the bleak assessment of the early years of historical archaeology by Cleland and South, there were some notable attempts at theoretical contributions in those early years. In addition to some important works on nineteenth century sites, like plantation and tenant farms in the southern United States, Cleland (1988:16) notes some work done on colonial sites. Once again South's contributions on British Colonial sites are cited, as well as Deagan's (1983) work on Spanish colonial sites in Florida. Among the various theoretical contributions, Judy Tordoff's (1983) model of fur trade and settlement in Colonial New

France has special relevance for the study of Fort de Chartres presented here.

Using historical documentary sources, Tordoff developed a hierarchical settlement model against which she would test archaeological data from a number of French colonial and aboriginal Indian sites:

To examine the fur trade in this study, I have constructed a hierarchical model based on historical sources. From my analysis of the written historical and documentary evidence, I have developed a model representing the French colonial fur trade system of the eighteenth century as a network of hierarchically organized bases. These bases were posts within a military organization and under a military government. Their primary function was to facilitate the operation of the fur trade. The posts in the French fur trade network were characterized by differing levels of functional complexity (Tordoff 1983:5-6).

From this model Tordoff constructed eleven hypotheses with regard to artifact distribution. These hypotheses were then tested against archaeological data from seven sites: Fort Ouiatenon, located on the Wabash River near present day Lafayette, Indiana; Fort Michilimackinac at the Straits of Mackinac; Louisbourg on Cape Breton

Island in Nova Scotia, Canada; the Guebert Site in Randolph County, Illinois; the Fletcher Site in Bay City, Michigan; the Bell Site in Winnebago County, Wisconsin; and the Lasanen Site in St. Ignace, Michigan.

Though archaeological evidence from Fort de Chartres was not available to Tordoff at the time of her study, she predicted that "Fort de Chartres could be considered a Regional Distribution Center" similar to Fort Michilimackinac (Tordoff 1983:44). Fort Ouiatenon, on the other hand, was argued to be a Local Distribution Center - one step down from a Regional Distribution Center. The key to her argument is that the settlement structure of these colonial outposts was determined by the economic structure of fur trade activity in North America.

This author had the opportunity for two years in the mid-1970s to be a field assistant for Margaret Kimball Brown on some of the early field school excavations at Fort de Chartres. A decade later, I was given the opportunity to conduct extensive archaeological excavations at the fort in order to produce information on eighteenth-century construction techniques and fort features. The information gleaned from the

archaeological record was used by architects in drawing up plans for reconstructing portions of the fort wall.

In order to gain a full understanding of construction techniques at the fort I undertook the task of organizing the entire artifact assemblage. Architects have very specific questions when drawing up plans for reconstruction. For instance, they needed to know what type of hardware was used on doors and windows.

It became clear to me early on in both the analysis of artifacts and excavation of fort features that Fort de Chartres did not fit the hierarchical model outlined by Tordoff. There were virtually no artifacts associated with fur trade activity recovered from any of the excavations at Fort de Chartres. In further examination of the application of the hierarchical fur trade model to various data sets it became clear that problems were encountered by Tordoff and others (Martin 1986).

As part of my research, I visited various French colonial sites in North America and spent time with the staff of historians and

archaeologists at the Fortress of Louisbourg in Nova Scotia. It became clear to me that the underlying problem with the hierarchical model proposed by Tordoff stemmed from the mistaken notion that fur trade in the eighteenth century structured all economic activity in the French colonies. There was too much variability in the artifact assemblages and within site settlement patterns at the various sites. Indeed there was also considerable difference in fort architecture and construction techniques at the various sites. I seemed to have stumbled upon an excellent opportunity to reexamine the fundamental assumptions concerning the economic activity on eighteenth- century French colonial sites.

It also became clear to me that there were three distinct categories of evidence from which to draw in such a study. First there is documentary evidence. Archaeologists tend to leave the analysis of documents to historians assuming that they are the best interpreters of these types of artifacts. Historians, however, are usually working on different types of problems and bring certain biases to their analysis of documents.

This is not to say that archaeologists, and particularly archaeologists working on historic sites, have not developed considerable skill with documents. One need only look at the body of works by Ivor Noel Hume or James Deetz to find examples of archaeologists working with historic documents and treating them as artifacts. In almost all cases, however, documents are used to examine specific problems like site location, land use patterns, artifact identification and use, to name a few. For excellent examples of this see the collection of articles edited by Mary Beaudry (1988).

In examining eighteenth-century North America, historians have favored research into the fur trade to the detriment of other aspects of the colonial economy. The stories of the fur trade, after all, are filled with adventure and intrigue; man versus nature and the discovery of new lands. Farming and agricultural pursuits, on the other hand, do little to stir the soul. Except maybe the archaeologist's soul.

There are some notable exceptions, however. Surrey's 1916 work examined commercial and shipping records from the Illinois Country.

Some of her research will be highlighted later in this work. More recently, Carl Ekberg (1998) has examined agricultural activity in relationship to land use strategies in France during the eighteenth century. He suggests that the *habitants* in the Illinois Country used a system of open field agriculture no longer practiced in France.

The second type of evidence is the material remains left behind and deposited at each site. These artifacts become very important in a study such as this. The presence or absence of various artifacts or artifact categories, as well as the differential quality of artifacts will allow us to make statements about economic activity at various sites.

The third type of evidence is structural, both the architecture on the site itself and the structure or arrangement of the settlement. These two have been neglected by both archaeologists and historians in their study of French Colonial activity in North America. In this study they become an important element in understanding the structure of the colonial economy.

The purpose of this dissertation will be threefold: first using evidence as outlined above to demonstrate that Fort de Chartres does not fit into the Fur Trade Hierarchy model as predicted by Tordoff; second this dissertation will attempt to demonstrate that the differential function between a select group of sites can be seen in the historic, archaeological, and structural evidence available; and third to propose a more comprehensive model of colonial economic activity on eighteenth-century French sites in North America.

Three sites have been chosen as subjects of this study. Fort de Chartres will be the main focus and the artifact assemblage from this site will be compared to Forts Michilimackinac and Ouiatenon (Figure 1.1). These sites were chosen for a series of reasons. First, all three forts are in the mid-continent - all almost equidistant from Paris. Second, they are all assumed to be engaged almost exclusively in fur trade economic activity by others such as Tordoff (1983). This would not be true for the Fortress of Louisbourg or the native American sites used in Tordoff's

analysis. It should be noted, though Ekberg(1998) suggests that the villages surrounding Fort de Chartres were heavily engaged in agriculture, he does not address the assumption that the Fort was established for fur trade activity. Moreover, he does not discuss the role of Fort de Chartres as integral to the larger colonial system of production and distribution of agricultural goods. Third, they are all fortified sites under the command of a commissioned French Officer. And finally, the artifacts from these sites have all been organized under a similar classificatory system.

This study will demonstrate that the variability between the artifact assemblages at Fort de Chartres and Fort Michilimackinac precludes any suggestion that Fort de Chartres operated as a Regional Distribution Center in the fur trade economy. Furthermore, this study will suggest that a more flexible economic model - one that focuses on the structure of regional economies - can best account for the variability among artifact assemblages at Fort de Chartres, Fort Michilimackinac, and Fort Ouiatenon.

Comparison of artifact assemblages will demonstrate that there are essentially two distinct 'patterns' represented at the three fort sites. Forts Michilimackinac and Ouatatonon belong to one pattern, but of a different order. Both sites represent an economy of **resource extraction** in which furs were gathered or collected from the surrounding region and processed at the forts for shipment to Europe.

Unlike Michilimackinac, which was a regional *entrepot* where traders and Indians involved in the fur trade from the entire Northwest brought their furs, Ouatatonon was an outpost site servicing the fur trade in a much smaller region with a smaller population. The artifact assemblages at these two sites should differ in frequency but not in kind.

Fort de Chartres represents a different pattern. The local economy in the Illinois Country surrounding Fort de Chartres was involved in the production of agricultural goods for export to New Orleans and the Caribbean. The artifact assemblage at this fort, then, is indicative of an **economy of production**. In addition, the settlement pattern and internal layout of Fort de Chartres differ radically from those of Michilimackinac

and Ouiatenon. Like Michilimackinac, de Chartres was an *entrepot* - but an *entrepot* in an economy of production rather than of extraction or collection. The difference between this assemblage and those of Michilimackinac and Ouiatenon varies not only in frequency between certain classes but also in kind.

CHAPTER TWO
FORT DE CHARTRES
AND THE DEVELOPMENT OF THE ILLINOIS COUNTRY

The construction of fortifications by the French in the Upper Great Lakes Region and Mississippi River Basin during the eighteenth century has been seen by some as an endeavor to secure and expand fur trade activity in the mid continent (Innes 1965; Tordoff 1983) and by others as a military tactic to divert the attention of the British from French activity in the French West Indies (Eccles 1969:157-160; 1972:179). Recent archaeological excavations at Fort de Chartres in the Illinois Country, however, suggest that French intentions in the interior of the Continent were more sophisticated and economic activities more diversified than previously thought.

A number of comprehensive histories have been written concerning this period - most notably Clarence Walworth Alvord's work *The Illinois County 1673-1818*. The goal of this chapter is not to paraphrase existing histories, but rather to organize and emphasize

documentary information as it pertains to the material culture of eighteenth-century colonial Illinois and by extension the archaeological data of Fort de Chartres.

First, the history of French involvement in the Illinois Country will be retold with a focus on the economic motivations for colonizing the Illinois country. Particular emphasis will be placed on the production of surplus agricultural goods and the impact this had on settlement patterns.

Second, considerable attention is given to eighteenth-century descriptions of Fort de Chartres. This will provide the necessary background for subsequent chapters that focus upon the physical attributes of the Fort as revealed in the archaeological record.

BACKGROUND FOR COLONIZATION

During the sixteenth, seventeenth, and eighteenth-centuries western European states experienced fundamental changes in their social, political and economic structures. The state-controlled economies of medieval Europe were transformed into a world system that operated beyond the bounds of any one state (Wallerstein 1974:7).

It was during this period of transformation that the North American continent became an important element in the economic landscape of three European powers: England, France, and Spain. Each set out to develop a series of colonies in America that would supply them with the raw materials required to fuel economic development.

In its quest for economic domination, France established a series of colonies in four distinct areas: the North Atlantic maritime region known as Acadia; the Saint Lawrence River Valley and the Great Lakes Region known as New France; the lower Mississippi River Valley and Gulf Coast region known as Louisiana; and various island holdings in the Caribbean commonly referred to as the West Indies (Figure 2.1)

The last of the four French colonies to be established was Louisiana (ca. 1700). The French initially founded Louisiana to secure the gulf coast region and protect it from Spanish hegemony and encroachment by British fur traders (McWilliams 1981:7). By the middle of the eighteenth century, however, Louisiana became an important variable in the French colonial economic equation. The success of this

FIGURE 2.1
Some Significant Sites in French Colonial North American



colony was due in large part to relations with the Illinois Country.

The Illinois Country became an important region to the French in the mid-eighteenth century. As Eccles (1972:179) indicates, it was a strategic location for the French. The structure and local economy of these settlements, however, suggest that these communities functioned as something more than defensive outposts for the expanding French Empire.

From the perspective of eighteenth-century Europe, Fort de Chartres and the Illinois Country lay at the edge of the world. Unlike New Orleans and most of New France, Illinois was not easily accessible by water. Shipping merchandise and traveling from the Illinois Country down river to New Orleans took only a few days; however, even in good weather it took more than a month to travel upriver from New Orleans to the fort. Even at a point so far from "civilization," the French decided to build a stone fortification that took three hundred soldiers and an undetermined number of local craftsmen almost two years to complete. The explanation for this striking development derives from the unique

character of the Illinois Country among the French Colonies as a source of agricultural products.

Because climate and soil conditions were conducive to producing an abundance of high quality European grains, the Illinois Country produced a surplus of agricultural goods soon after settlement. This surplus was shipped to New Orleans and other settlements in Louisiana as well as to settlements in the West Indies (Surrey 1916:289). In effect, the Illinois Country became the bread basket for the lower Mississippi River Valley and the Caribbean. Those settlements, receiving food from Illinois, could concentrate on other pursuits such as defense and trade in Louisiana and sugar production in the West Indies.

THE FRENCH IN ILLINOIS: THE EARLY YEARS

French movement into the Illinois County in the late 1600s was the result of the colonial policies of Jean Baptiste Colbert, minister to King Louis XIV. Colbert sought to develop the commercial resource base of each colony in order to enrich the national treasury and thereby establish and preserve the economic domination of France over other European nations. This economic system became known as Colbertism

and was eventually referred to as mercantilism (Eccles 1972:60).

To develop the commercial resources of a colony, one needed first to explore the area carefully and then to establish settlements. In the Illinois Country, French settlement began with the establishment of the mission of the Immaculate Conception by Jesuit Father Jacques Marquette in 1675, two years after he and Louis Joliet first explored the Illinois Country. This mission, established among the Kaskaskia Indians, a subgroup of the Illiniwek, was located at their village on the Illinois River directly opposite Starved Rock, near present day LaSalle, Illinois.

By 1680, an Iroquois raiding party drove out the Kaskaskia and other Illiniwek groups (the Cahokia and Peoria). In 1703, after having been displaced a number of times, the remnants of the Kaskaskia settled on the Kaskaskia River just north of its confluence with the Mississippi in what is today southern Illinois. By this time, however, the Kaskaskia along with the Jesuit mission had attracted a handful of French fur traders and their wives.

Many of these fur traders (*coureurs de bois*) were living in the territory illegally. Throughout the seventeenth century, the French crown attempted to regulate the fur trade by issuing permits (*conges*) to various individuals. The North American wilderness, however, was vast, and an individual could always get a price for his furs. Indian villages with Christian missions often proved to be convenient residences for those who wished to conduct their economic affairs beyond the reaches of colonial administrators.

As a result, the number of French in this village began to increase. By 1719, the Kaskaskia Indians decided to move a league and a half up river and establish a village of their own, separate from the growing community of French inhabitants (Palm 1931:49; Good 1972:31). A census taken in 1723 by M. Diron d'Artaguiette, Inspector General of the colony, found more than 300 French inhabitants of the Illinois Country distributed among three villages (Belting 1948:13):

Kaskaskia:	64 habitants
	41 white laborers
	37 married women
	54 children

Chartres:	39 habitants 42 white laborers 28 married women 17 children
Cahokia:	7 habitants 1 white laborer 1 married women 3 children

The founding and growth of Kaskaskia illustrate a pattern of development repeated in a number of French colonial settlements prior to 1713. A mission outpost is established among an Indian group; it becomes home to fur traders and other frontiersmen attracted to the area because of economic incentives stimulated by Colbert's policies. Others, also seeking economic opportunity, are attracted to the small settlements. Eventually a community or village forms with social institutions that reflect the parent culture (Briggs 1985).

This pattern of settlement was not to endure, however. The signing of the Treaty of Utrecht in 1713, which ended the War of Spanish Succession (1701-1713) in Europe, marked a shift in colonial policy and subsequently a change in settlement strategy in Illinois. Prior to 1713 economic ventures were left to the initiative of individual *couriers de*

bois and entrepreneurs like LaSalle who were encouraged by the economic policies of Colbert. After the signing of the treaty of Utrecht, the government in Paris realized that, without a more aggressive colonial policy, France risked losing her holdings in North America (Eccles 1972:179).

THE FRENCH IN ILLINOIS: THE DEVELOPMENT OF A COLONY

In the Treaty of Utrecht, France accepted significant losses of the American Continent, ceding Newfoundland and Acadia (Nova Scotia) to the British. Cape Breton Island and some lesser islands in the Gulf of St. Lawrence, remained in French hands (Hawke 1985:333). The final clause of the treaty, however, introduced an element of ambiguity. This clause, known as Clause 15, provided both France and England with rights of unrestricted trade and influence among the Indian allies (MacDonald 1910:232).

Problems developed when native populations, pursuing traditional subsistence and settlement strategies, ventured beyond territorial boundaries established by European treaties. In those instances, each

colonial power would invoke Clause 15 in an attempt to appropriate additional lands. The rival colonial power would interpret this action as encroachment and a violation of treaty provisions. Some form of conflict, usually a raiding party or small skirmish, ensued.

In addition to these factors, France found herself in economic trouble. The preceding wars in Europe cost the crown dearly; France was on the verge of bankruptcy, and America increasingly became a compensating element in the mercantile economy of the Kingdom of France. Reforms were necessary and the French monarch called upon a Scotsman, John Law, to restructure the French economy.

Law introduced a number of new policies to stem the financial crisis of the 1710s. He urged the adoption of credit and coinage as well as the establishment of chartered companies to develop the colonies (Alvord 1922:150). The Company of the West was chartered in 1717. Under the terms of the charter, the company held a monopoly on trade in Louisiana. This monopoly included the buying of beaver; free disposal over all forts, ports, depots, and the garrisons of the province; ownership

of all mines opened up by the company; free importation of French goods into Louisiana; and a reduction of the duty on goods imported to France as well as other rights. A supplemental ordinance was added to this charter that formally incorporated the Illinois Country into Louisiana. All of this took effect on January 1, 1718. By December of 1718 a new commandant, Pierre Duque, Sieur de Boisbriant, arrived at Kaskaskia in the Illinois Country with orders to construct a fort.

Boisbriant, a Canadian by birth, had come to Louisiana in 1700 with his cousin, d'Iberville. At the age of 47 he assumed the duties of commandant of the Illinois Country. Boisbriant actually reached Kaskaskia in 1718 accompanied by the chief clerk of the Company of the West, a *grade magazin*, an underclerk, an engineer machinist for development of mines, some officers and one hundred troops (Belting 1948:17).

Upon his arrival, Boisbriant proceeded to organize a land-distribution system in the village of Kaskaskia and to erect a fort to serve as the seat of government (Palm 1931:50). In addition, his administration

was "to get for his employers [the Company of the West] the largest profits from the mines and the fur trade; at the same time, by promoting agriculture, he was to establish the region as the granary of Louisiana" (Belting 1948:17). He chose as the location for the fort a spot approximately 10 miles north of Kaskaskia on the banks of the Mississippi River. At that time the immediate area had no inhabitants. By 1721, this first fort was completed and named de Chartres after the Duke de Chartres.

Concurrently, colonists settled around the fort in an area that became known as the Village of Chartres. In 1723, Dartaquette described the fort and village during an official inspection of the Illinois Country:

Fort de Chartres is a fort of piles the size of one's leg, square in shape, having two bastions, which command all of the curtains. There are two companies in garrison commanded by M. de Boisbriant, Knight of the Military order of St. Louis, first royal lieutenant of the province. There is a church outside the fort and some dwellings a half league lower down on the same side as well as half a league above as far as the little village of the Illinois where there are two Jesuit fathers, missionaries who have a dwelling and a church. This little village is called

Mechiquamias [sic] and numbers perhaps about 200 warriors (Mereness 1916:69).

As previously demonstrated, the village of Kaskaskia illustrates a settlement strategy that characterized North America prior to the Treaty of 1713. A colonial settlement essentially grew out of a Native American settlement. The first settlers, generally fur traders, first lived among the native population until, as in the case of Kaskaskia, the native population moved away leaving the growing colonial population. The village of Chartres illustrated a settlement pattern that the colonists pursued after the signing of the Treaty of Utrecht. Here we have a planned community. Though, primitive even by eighteenth-century planning standards, the colonial population took up residence in a particular location as part of an economic strategy. Economic and settlement activity throughout the eighteenth century was administered and managed through the central government or one of its chartered companies in France.

The settlements were established as part of an economic development plan. The Company of the West was chartered in order to

develop a surplus resource base in Louisiana. The surplus (especially grain) would be used to supply two areas: the colonies in the Caribbean that produced sugar (a commodity in great demand in eighteenth-century Europe) and other colonies in Louisiana, particularly along the lower Mississippi River Valley that the French had established to deter the movement of British fur traders into the area (McWilliams 1981:10). The location of settlements and outposts in this post-1713 period was part of an economic strategy aimed at developing the resources in a particular region and protecting existing French interests.

It should be noted that, although fortifications throughout the colonies were staffed by the military, these officers and soldiers were paid by the company chartered to develop the area. They chose the location of many fortifications, villages and outposts for economic advantages rather than for strategic considerations. Such priorities emerge by examining the circumstances surrounding the location of a number of other sites.

Fort Michilimackinac, for instance, was first constructed sometime

between 1715 and 1717 (Stone 1974:8) at the Straits of Mackinac, which separates Lake Michigan from Lake Huron. Colonial activity in that area, however, began much earlier. In the 1650s Radisson and Groseilleirs, two early fur traders, had reached that area and traded beaver with the Indians. In 1671, Father Marquette set up the mission of St. Ignace on the Straits and in 1683 this mission site became a military post with a garrison of 30 soldiers (Stone 1974:6). The Upper Great Lakes region was closed to fur trade in 1696 by Louis XIV and the post abandoned. It was not until 1710 that the Governor of New France initiated plans to establish a post at the Straits of Mackinac (O'Callaghan 1855:866). Except for the Mission of St. Ignace serving the Huron, there was no Euro-Canadian settlement in the area. In fact, even with the establishment of Fort Michilimackinac, the colonial settlement was located within the fort itself. The site did, however, experience considerable use.

There was little fluctuation in the size of the garrison at the fort. It is reported that in 1717 the garrison was composed of approximately 23 soldiers. By 1729 the number increased to 35, and in 1747 the troops number 28 (Stone 1974:8). One map of the fort and its environs believed

to date from 1717, however, indicates that approximately 600 *coureurs de bois* were gathered there during trading time (Maxwell and Binford 1961:11-12; Stone 1974:8). The fort functioned to develop the fur trade resources in the area, an economic endeavor that did not require colonization.

The establishment of Fort Ouiatenon followed a similar pattern. In 1717 the Governor of New France sent a small garrison to the Wabash River to protect French influence among the Wea (Noble 1983:15). The Iroquois-Fox alliance forced the French to abandon water routes in Illinois and Wisconsin that linked New France to Louisiana. With the establishment of Ouiatenon, garrisoned by about 12 soldiers (Martin 1986:14), the French Canadians hoped to maintain their trade relationship with the Wea and simultaneously secure the Wabash-Maumee corridor as a trade route between New France and Louisiana (Surrey 1916:36).

As in the case of Fort Michilimackinac, Fort Ouiatenon, in northern Indiana, had a handful of settlers living inside the fort engaged in fur

trade. The French did not establish settlements outside the fort walls. Ouiatenon primarily served to protect the fur trade between the French-Canadians and the Indians from encroachment by the British. Again this extractive industry did not require the establishment of a colonial settlement beyond the walls of the fort.

In Louisiana the establishment of Fort Toulouse and Fort Tombeckbe followed the same pattern. They were built as outposts to secure the fur trade among aboriginal populations. The colonial settlement of New Orleans, on the other hand, began to develop in the delta region of the Mississippi River. It became the seat of government for Louisiana.

During the decade of the 1720s, the Company of the West, renamed the Company of the Indies in 1719, suffered considerable financial setbacks in Louisiana. In spite of the surplus of wheat, salt and other goods annually shipped to New Orleans from Illinois and the cotton, tobacco, tar, lumber and indigo produced in Louisiana for export, irregularities in trade and corruption of employees and colonial

officials seriously damaged the enterprise. Consequently, in 1731, Louisiana once again became a crown colony (Surrey 1916:168).

By 1729, the inhabitants of the Illinois Country were producing a surplus of wheat and salt that they shipped to New Orleans (Surrey 1916:289). There was not, however, much of an increase in the population (Belting 1948:38). This suggests that even with very little immigration into the colony during this decade farming had become a well-established economic pursuit among the *habitants*.

The original Fort de Chartres, which was square and had two bastions and a wooden palisade, suffered from the deleterious effects of natural forces. By 1726, the flood waters of the Mississippi had destroyed much of this first fort built by Boisbriant (Belting 1948:18). Documentary sources are unclear about what actually took place after the deterioration of the first fort. An inventory of the property belonging to the Company of the Indies taken in 1732 described the fort as:

...falling to pieces, was 160 feet square with four bastions in which there were five cannons. On each of the scaffolds was hung a bell. Inside the palisade was the house of the

commandant and garde magazin, a frame building 50' by 30'. Another building of the same size housed the garrison and the armorer's forge; there was a third house of posts in the ground, 30' by 20'. In one of the bastions was the prison, in one the hen house, and in another, a stable (Belting 1948:18).

Documentary sources do not clearly indicate whether the first fort had been repaired and two bastions added or an entirely new fort built immediately after the destruction by flood waters. A land description, however, dating to 1726 (Brown and Dean 1977: 355) suggests that there already was an "old Fort" distinct from that occupied at the time of the land transaction (Price 1980:2-3).

THE FRENCH IN ILLINOIS: THE CONSTRUCTION OF THE THIRD FORT DE CHARTRES

There was considerable anxiety about the safety of the settlements in the Illinois Country during the 1730s and 1740s. At the instigation of the British colonists, Indian raiding parties planned and carried out attacks upon the Illinois Indians who were allied with the French. Consequently, in 1733, plans were initiated by the Governor Bienville of Louisiana to construct a stone fortification in the Illinois

Country.

I have learned with great satisfaction that the establishment of the Illinois was considerably enlarged and I am sure that if the lower part of the colony maintains itself in a state of reasonable comfort and if the inhabitants of the upper part can hope to carry on any commerce there, the post of the Illinois will in a short time be more considerable and more populous than all the rest of this government together; but my lord will permit me to repeat to him that I think that it is indispensably necessary to have a stone fort built there in order to make an impression on the Indians and to check the progress that the English would try to make in the direction of the Wabash. This expense will not be great for the King. The stone and the lime are found on the spot and the labor will not be dear there when it is paid for in selected merchandise (Rowland and Sanders 1932:616).

Plans continued for the construction of a stone fortification, but the location was moved. At the prompting of La Buissonniere, second in command at Fort de Chartres to the commandant d'Artaguitte, the new fort would be located on the bluffs across the river from the French settlement of Kaskaskia. The engineer Brontin selected a site and drew up plans. The cutting of stone began in 1738 (Alvord 1920:182; Orser and

Karamanski 1977:13), but construction was halted the following year. The royal treasury, already drained by conflicts in Europe, could not meet the rising cost of materials and labor required to complete the project.

In spite of the constant threat of Indian raids, the Illinois settlements grew during the 1730s and 40s, and they increased the agricultural surplus shipped to New Orleans.

The convoys from the Illinois country carried to the Gulf settlements, in 1748, 800,000 pounds of flour alone. Besides the flour the cargoes were made up of corn, bacon, hams from the bear as well as the hog, salt pork, buffalo meat, tallow, hides, tobacco, lead, copper, small quantities of buffalo wool, venison, bear's oil, tongues, poultry and peltry, chiefly, however, the loads were made up of pork and flour (Surrey 1916:293).

Fort de Chartres remained the center of government in Illinois even though it was in bad repair.

War, however, drew the attention of the French Monarch away

from the colonies and to more immediate affairs on the continent. The war of Austrian Succession, which began in 1740, found the French and the British once again on opposite sides. Hostilities were not limited to the continent, however. In an attempt to control the entire North Atlantic sea coast, a New England regiment captured the Fortress of Louisbourg on Cape Breton Island in Nova Scotia (McLennan 1918:161). This extensive war was costly, leaving very little money for the construction of a stone fortification on the frontier of colonial France.

The war officially ended with the Treaty of Aix-la-Chapelle (October 18, 1748). Though the treaty ended hostilities, it did little to resolve the cause for antagonism between the French and the British. The terms of the treaty set the clock back to conditions in Europe and the colonies as they were prior to 1739 (McDonald 1910). The French saw this as their last opportunity to secure their hold in North America, which British-American interests had greatly eroded.

Back in the Illinois Country, a number of significant events took place. In addition to the record harvest cited above, M. de Bertet, the

commandant at Fort de Chartres, abandoned the fort in 1748 and moved to Kaskaskia. By this time the wooden stockade had badly deteriorated. In addition documentary sources suggest that there were a series of raids upon the French settlements in Illinois by hostile Indians allied with the British. As a precaution Bertet moved "all the French into one village," Kaskaskia (Pease and Jenison 1940: 77). This move had disastrous consequences.

First, an epidemic hit the Illinois Country sometime late in 1748, and "carried off a good many of the inhabitants" (Pease and Jenison 1940: 103). This appears to have taken place after Bertet moved many of the inhabitants to Kaskaskia. By concentrating the entire population into such a small area, Bertet increased exposure to the disease and thereby its effects upon the population (see McNeill 1976). Bertet himself may have been a victim of this unknown disease. He is reported as dead in May, 1749 (Pease and Jenison 1940: 91).

Second, the wheat harvest of 1749 fell below the level reached the previous year. The paucity of the yield proved insufficient in

providing flour for troops and populations in Louisiana (Pease and Jenison 1940: 91,103). Though never stated in the documents, the poor harvest was probably due to the decrease in labor force that resulted from the epidemic. After Bertet's death, Jean Baptiste Benoist became interim commandant in Illinois.

Since the Illinois Country had become the major supplier of grain to the whole of Louisiana, it was important to stabilize production of surplus agricultural goods in the region (Surrey 1916:288). Fluctuation in the supply of grain from Illinois would cause food shortages in Louisiana and the West Indies sugar plantations. Such shortages would destabilize the entire trade network and weaken the French hold on the colonies. Vaudreuil, the governor of Louisiana, understood the importance of Illinois grain. Consequently, he appointed Macarty Mactigue as commandant of the Illinois Country.

Macarty began his military career in the court of France as a musketeer and came to Louisiana as aid major in 1732 (Pease and Jenison 1940: xiii,n). Reportedly ambitious, Marcarty rose through the

ranks and obviously impressed the governor with his abilities. In September 1750, Vaudreuil, with encouragement from Rouille, Minister of the Marine in France, appointed Macarty commandant of the Illinois (Pease and Jenison 1940: 232). Macarty was sent to Illinois late in the summer of 1751 with four companies of soldiers (a company is approximately 50 men) and explicit instruction for his mission in Illinois.

Vaudreuil produced a series of lengthy documents in which he outlined the policies and programs that Macarty was to execute. These policies and programs cover three basic areas: the increase of grain production, stabilizing relations with the Indians, and construction of a stone fortification. Though each objective was dependent on the other two, the most important appears to have been the development of agriculture in Illinois. Rouille writes Vaudreuil in 1750:

[I]t is much desired that the Sieur de Macarty may give as much attention as he [Bertet] did to means of securing the progress of that settlement and particularly of increasing the cultivation of the soil. That pursuit must always be preferred to the others of which that post may be capable; and you on your side cannot be too attentive to making the inhabitants

understand that it is chiefly on the success of their cultivation that the success of their settlement depends (Pease and Jenson 1940: 232-233).

Obviously, Macarty had some success in this area. The annual shipment from Illinois to New Orleans in 1752 was reported as "unusually large" (Surrey 1916:297). Throughout the 1750s the supplies from the Illinois Country became more and more important to the lower colonies as supplies from France and New France were cut off during the French and Indian War (1754-63).

In the area of Indian relations, Macarty had much less success. Unlike Boisbrant, builder of the first Fort de Chartres, who was known for his facility with the Indians (Alvord 1922:153), Macarty had "little talent for dealing with the Indians" (Alvord 1922:233n). He was fond of providing the Illinois with liquor to pacify them, thereby ignoring many of their real needs (Pease and Jenson 1940: 718-724). In fact Duquesne, the Governor-general of New France from 1752 to 1755, wrote Rouille in Paris in October of 1753 complaining about Macarty:

I should not, Monseigneur, leave you ignorant of the fact that Sieur Macarty, commandant at the Illinois, pursues at his post an infamous line of conduct. He has limited his trade to brandy which he gets from Louisiana the abundance of which corrupts not only the Indians but even the French....to such a degree that they completely neglect their farms.....(Pease and Jenison 1940: 847).

Macarty's third assignment was to construct a new stone fortification in the Illinois Country to replace the badly deteriorated Fort de Chartres. This was to be a major capital development project in Illinois. Unlike Forts Ouiatenon and Michilimackinac, which were built with money collected in the colonies from the fur trade, this stone fortification would be built with funds supplied directly from the Royal Treasury in Paris.

As mentioned above, Macarty ascended the Mississippi River with four companies of soldiers. Included in this group were some skilled craftsmen for the construction of the new fort and an engineer, Francois Saucier, described as a Creole but educated in Paris in the military engineering techniques of Vauban (Pease and Jenison 1940: xliii). There

were already two companies at Fort de Chartres. This addition would bring the total number of troops stationed at Fort de Chartres to about 300. Since the fort was in very poor repair, it appears that most of these troops were quartered with the local inhabitants (Pease and Jenison 1940: 298,407,426).

The construction of the new fort raised difficulties regarding location and cost. There seems to have been a considerable difference of opinion concerning the new location of the Fort in the Illinois Country. Vaudreuil favored a site near the French village of Kaskaskia, while Macarty was inclined toward a location near the village of Chartres. In the end Macarty won and the new stone fortification - the third Fort de Chartres - was built in the immediate vicinity of its predecessors. In order to understand the function of Fort de Chartres in the colonial strategy of the French, it is useful to examine the debate on the location of the new fort in more detail.

The French village of Kaskaskia contained a larger population than did the village of Chartres. For this reason, Vaudreuil decided to

instruct Macarty to select a site in that vicinity.

But whereas Fort de Chartres has up to now been the chief post of this country - the reasons for which are not too apparent - and the residence of a commandant, although it is the place with the fewest inhabitants.....we judge that for the good of the service we should fix the residence of the said Sieur de Macarty at Kaskaskia, that being the principal post, including almost as many inhabitants as all the others put together, being the place of resort of the greatest part of the tribes and the most proper and least costly site for the establishment of a new fort capable of lodging a larger garrison than in the past, Fort de Chartres not being large enough to hold it. Moreover Kaskaskia is the place of resort of all the voyageurs and the convoys and the most proper place to protect the different settlements of that country from the enterprises that are to be feared from the English or Indians (Pease and Jenison 1940: 297-8).

This passage suggests that Vaudreuil had two concerns. He wanted to protect the French population, especially in areas most densely occupied by French settlers, from attacks by the English and Indians, and he wanted to assure commercial trade activity.

Macarty had different concerns that seemed to have matured

during his tenure at the court in Paris. In a letter written to Rouille even before he left for Illinois, we find that he wanted to increase grain production by increasing the population and improving access to farming technology.

As soon as I am at the Illinois I will induce the inhabitants to double their cultivation of grain...If Your Greatness was disposed to order the loan of plows and teams for the new colonists who are to be sent there, it would cost seven hundred livres which would be levied in flour on their harvests and dispatched to the king's storehouse at a fixed and reasonable price (Pease and Jenison 1940: 279).

Two years later, in 1753, in another letter to Rouille he once again requests immigrants to be sent to the area:

We always hope that Your Greatness will be pleased to send us families to increase the farming of this country as well as salt smugglers to work in the lead mines which are very abundant and supply a part of the posts of Canada and the tribes of that region as well as those here (Pease and Jenison 1940: 818).

As these passages suggest, Macarty preferred a location for this

new fortification conducive to increasing grain production and population settlement. In fact, in a letter to Vaudreuil, Macarty indicates that in his inspection of possible sites for the new fort he was taking into consideration the planned **city** that will be built adjacent to the fort (Pease and Jenson 1940: 423).

In Macarty's mind Kaskaskia was an inferior location when compared to the open plains near the villages of Prairie du Rocher and Chartres.

December 14 I went with M. Buchet, M. Benoist, M. Saucier, and the Reverend Father de Guyenne and several inhabitants to inspect Fort de Chartres and its environs. On the way thither, I found fine prairies untilled; you have only to put the plow in them. We passed Prairie du Rocher, which is a beautiful and good location. We walked along the Mississippi where a fort was formerly designed to be built. That site would be much more advantageous than Kaskaskia if the inhabitants were more numerous, as it has the Mississippi by which you could always go in search of help, and a plain which is on no side commanded from the river. You could also settle on the two banks, whereas boats drawing twenty inches could hardly pass up the Kaskaskia when we arrived (Pease and Jenson 1940: 440).

The shallowness of the Kaskaskia River convinced Macarty not to locate the fort at Kaskaskia. He was concerned about shipment of grain and the availability of enough good land for population growth.

Vaudreuil, however, remained adamant. He wanted the post located at Kaskaskia. Macarty, though respectful, became more vehement in voicing the disadvantages of the Kaskaskia site:

All that I can tell you of the Kaskaskia River since I have been here, is that it has not been possible to take an empty boat up it until a few days ago, and that a loaded boat could not have been sent off for New Orleans without risk since the month of August. The experience of M. Girardeau proves it. This river is not a resource for wood which will be scarce at this post in a few years, as it has neither current nor water three-quarters of the year. Its environs are nothing but marsh, and its water much complained of as causing frequent sickness. I have even observed the frequent colic it occasions in the troops (Pease and Jenison 1940: 557).

Even Father Guyenne, who often complained about Macarty's bibulous behavior, agreed that a fort at Kaskaskia would be indefensible: "...for what would be the fate of the fort proposed to be

built in the plain at the village of Kaskaskia which is commanded by a hill from which it could be battered to pieces?" (Pease and Jenison 1940: 718).

Each appears to have held firm in his conviction of the appropriate location of the fort until Vaudreuil was called back to France in 1753. He would not return to America until appointed governor of New France in 1755. A new governor, Louis Billouart Kerlerec, was assigned to the post in Louisiana. He immediately reviewed the plans and cost projections for the new fort in Illinois and made some revision.

On my arrival in this colony I found the project of the fort which was to be built at Illinois arranged, determined, and approved, the estimated expense of which, at very low prices amounts to 270,000 livres. Nevertheless, since this matter merited every attention I have considered that I could not dispense with revising the plan and estimates in order to find the means of diminishing the expense without diminishing the strength of its defense nor derogating from the object of its establishment (Pease and Jenison 1940: 828).

Kerlerec was eventually able to reduce the cost of the fort

originally projected by Saucier from 450,000 livres to 250,000 livres. Though documentary sources suggest that some of the stone cutting and mortar manufacture for the fort had already begun, it is not clear whether the third Fort de Chartres was already under construction by the time Kerlerec revised the plans. We do know that by July 1754, Kerlerec in a letter to Paris reports "the greater part of the work finished" at Fort de Chartres (Pease and Jenison 1940: 881).

By this time the Illinois Country was supplying grain not only to Louisiana and the West Indies but also to the outposts in the Ohio River Valley. In fact, the mismanagement of some grain shipments by Macarty (Pease and Jenison 1940: 892-893) compounded by his drunkenness and poor management of Indian affairs resulted in his replacement in 1756 by Neyon de Villiers, Aide Major to Macarty at Fort de Chartres. Macarty remained in the Illinois Country until 1760 and appears to have continued his duties in the area of economic development of Illinois.

Limited information in the documentary sources make it impossible

to specify Macarty's precise role at Fort de Chartres after 1756.

Vaudreuil was a prolific and detailed writer (Pease and Jenison 1940:I).

In his correspondence he left a paper trail of events and policies that enables us to construct a historical narrative of the pre-French and Indian War period. This unfortunately is not the case with his successors. What we know of the Illinois Country during the French and Indian War Period is gleaned from other sources far less detailed about the affairs and events at Fort de Chartres and the Illinois Country.

THE FRENCH AND INDIAN WAR: THE END OF THE FRENCH PERIOD

The Treaty of Aix-la-Chapelle in 1748 was an uncomfortable peace. The British returned to France all territories won by the American colonists including Louisbourg, while the French returned to England territories won in Europe (McLennan 1918: 181). Even though England reimbursed the British colonists for expenses incurred during the war, hard feelings toward the French colonists persisted. British colonial fur traders, not content with the peace, ventured into the Ohio River Valley to conduct business with the Indians (Hawke 1985:382-383).

In 1752 the Marquis Duquesne was appointed governor of New France with instructions from the Minister of France 'to drive the English away from our lands' (Thwaites 1908:119,121). Consequently, he began to set up a series of forts along the Ohio River. The British Governor of Pennsylvania, Robert Dinwiddie, upon hearing that fortresses were being constructed on the Ohio in territory he considered Pennsylvania, sent a delegation that included George Washington to tell the French to leave. A confrontation ensued, and Washington's troops were defeated by a force of 500 French soldiers and 400 Indians on May 28, 1754 (Hawkes 1985:385). The French and Indian war was underway.

In the first years of the war, the French defeated the British in a number of significant battles. The tide turned, however, in 1759; by the end of September, the British, in a three pronged attack, took Forts Niagara, Ticonderoga and Crown Point, and the city of Quebec (Hawkes 1985:394-395). Fort Michilimackinac, at the northwest end of New France, did not surrender to British forces until September of 1761 (Stone 1974:9). Fort de Chartres, deep in the center of the continent remained in French hands until hostilities ceased and peace between

the two nations was negotiated.

The Treaty of Paris, signed in February of 1763, ended the French and Indian War and thereby French colonial activity on the North American continent. The terms of this treaty stipulated that all French territories east of the Mississippi, except for New Orleans, be ceded to the British (Alvord 1922: 245). British forces took control of all French settlements and outposts except for one - Fort de Chartres in the Illinois Country - that remained under French command until 1765.

Acquisition of the interior of the continent along with its native Indian and French colonial population proved problematic for the British. For well over 100 years, the French had cultivated a trade relationship with various Indian groups on the continent and established procedures and rituals of trade. In addition trade had been regulated by the central government and policed by traders, local officials and the clergy.

British trade practices differed from those of the French. The British

had developed a market system based on capitalist principals that allowed traders and trading companies to operate in a free market with few restraints. Under this system Indian traders could never be guaranteed a set price for their goods. Consequently, winning the loyalty of the Indians was difficult and in some cases impossible.

In addition to the stressful trade relationship between the British and Indians, settlement policies presented some problems. Under the British colonial market system, land was a commodity to be bought and sold (Cronon 1983:76-77). With the acquisition of territory between the Allegheny Mountains and the Mississippi River, land speculators began buying and selling land used by the Indians for trapping and subsistence activities. The Indians suddenly found those areas inaccessible.

This radical change in policy exacerbated antagonistic relations between the Indians and British colonists. As early as 1763 various tribal groups banded together and attacked the new British outposts in the Ohio River Valley, capturing all but Forts Niagara, Detroit and Pitt. This uprising, which became known as Pontiac's rebellion, coupled with

numerous attacks by Indians on British troops moving through the new territory, prevented British forces from occupying the Illinois Country until 1765 (Alvord and Carter 1915:xxxvii).

THE BRITISH IN ILLINOIS: THE CLOSE OF COLONIZATION

Captain Thomas Stirling arrived with a detachment of over 100 men from the 42nd Royal Highland Regiment at Fort de Chartres on October 9, 1765, and took command of the post (Carroon 1984:7). He quickly learned that Indian relations were not his only problem in this wilderness outpost. Many of the French inhabitants of the Illinois Country had begun to emigrate:

I have not been able to get an Exact Account of the Number of the Inhabitants as there is always many of them at New Orleans, trading with the Indians, or Hunting, which they go to as regularly as the Savages, the village of Caskaskias has about fifty familys, and at Caho [Cahokia], about forty, those of Prairie du Rocher, Fort Chartres and St Philip are almost totally abandoned; this settlement, has been declining since the commencement of the war, and when it was ceded to us, many families went away for fear of the English, and want of troops to protect them from the

Indians, they have formed a settlement since the Peace opposite to Cahokia [sic] called St. Louis where there is now about fifty families, and they have another opposite to Caskaskias [sic], called St. Genevieve.... (Alvord and Carter 1916: 125).

Lands west of the Mississippi became the sovereign territory of the Spanish Monarch in 1763. It appears that, if the French colonists of the Illinois Country could not be ruled by a French Catholic, Bourbon Monarch they would prefer a Spanish Catholic, Bourbon monarch to a Protestant British one (Ekberg 1985:41). The emigration of the French colonists from the Illinois Country proved disastrous for the British. Though French and Indian relations in Illinois were always strained during the eighteenth century, an uneasy state of peace had existed. This peaceful coexistence developed out of the economic relationship the French had developed with the Indians. Emigration of the French ended this relationship and thereby ended the peace.

The French colonists had developed a relationship with the Indians in which they would provide them with gifts, food, and European goods in exchange for furs. There is some question as to the profitability

of this trade relationship. Climatic conditions in the Illinois Country were mild in contrast to those farther north. Consequently, the quality of the furs coming from Illinois were inferior to those from colder climates of New France and the Great Lakes Region (Alvord 1922: 106). This trade relationship, however, enabled the French to pursue other economic activities in Illinois without arousing hostility.

Fur trade activity by both the French and British was more complicated than providing European furriers and haberdashers with raw materials. White (1991:105) suggests that fur trade between the French and Algonquian speaking peoples was not only used to develop a political alliance, but also to link the indigenous peoples to the larger world economy. The movement of the British into the Illinois County had greater implications than simply a change in a political boundary.

The British troops arrived at Fort de Chartres without any provisions and gifts to give to the Indians. During French occupation, the Indians had been accustomed to gather at Fort de Chartres in the spring in order to receive gifts and trade furs; however, in the Spring of 1766, this

trade ritual engendered a crisis for the British. Without extra provisions, Sterling was forced to purchase large quantities of goods from French merchants across the river at inflated prices (Alvord and Carter 1916: 110).

In subsequent years, the British could not come by French goods so easily and avert potentially dangerous situations. Difficulty in getting supplies to the fort (Alvord and Carter:1916:472,480) contributed to the eroding relationship between the British and Indians. Frequent hostilities between the British and the Indians heightened the anxiety of the British troops at Fort de Chartres; they were in constant fear of attack (Hutchins 1769-1770).

Major General Thomas Gage, the commander of British Troops in America, had proposed the abandonment of Fort de Chartres (by this time renamed Fort Cavandish by the British) as early as 1768 (Alvord 1922: 296). Maintenance of frontier outposts had become an economic burden on the British crown. At the close of the costly French and Indian War just a few years before, the British had found themselves in

possession of a large portion of North America. Now, war between Great Britain and Spain over the possession of the Falkland Islands distracted the government from making any final decision on the fort. In 1771, Gage ordered Fort de Chartres and Fort Pitt demolished and abandoned.

Sometime in the late spring or early summer of 1772, Major Issac Hamilton, the commander of Fort de Chartres carried out this order.

I destroy'd the fort in such a manner (under direction of the lieutenant Douglas of the Artillery) that at present it cannot afford the least shelter to any person. I removed all the stones that were laid to prevent the river from washing away the bank & opened drains to admit the water, that I am sure the floods next Fall will entirely wash away the Front of the Fort (Hamilton 1772).

Major Hamilton then left the Illinois Country with all but 50 troops "who remained to protect the Inhabitants until they could remove their effects..." (Beckwith 1903: 293).

CHAPTER THREE

POST OCCUPATIONAL HISTORY

The ability to reconstruct cultural behavior from archaeological remains is dependent upon the integrity of the archaeological record. A number of studies have been conducted describing the natural and cultural events that alter the archaeological record and thereby complicate interpretation of context and generation of data (Schiffer 1972, 1976; Wood and Johnson 1978). The veracity of our conclusions concerning human behavior reflected in the archaeological record depends on our understanding of the natural and cultural disturbances that have altered the record under investigation. Consequently, understanding the post- occupational history and environmental setting of a site under investigation are imperative.

In the case of Fort de Chartres, a period of 200 years passed between the abandonment of the Fort by the British in 1772 and the first archaeological investigations in 1972. During this period a number of cultural and natural events have altered the landscape upon which the fort rests as well as the ruins of the fort itself. This chapter will examine

the natural setting of the fort as well the post-occupational activity at the site.

THE ENVIRONMENTAL SETTING

In the heart of the American Midwest, along the central Mississippi River Valley, is an area that has become known as the American Bottom (White, et.al. 1984:17). This large floodplain is bounded on the east by the Illinois Bluffs and on the West by the Missouri Bluffs; it stretches 161 km southward from Alton, Illinois on the north to Chester, Illinois on the south. It is in the southernmost section of this vast floodplain, just north of the town of Chester, that Fort de Chartres was first constructed.

It was not by accident that the French first chose this area for settlement. The Jesuit mission in the Illinois Country was producing a "fine grade" of wheat and exporting it to Louisiana as early as 1721 (Surrey 1916:288). The fertility of the soil and the abundance of aquatic resources must have been apparent to the French.

To understand the physical circumstances the French colonists

encountered when they first inhabited the area, it is necessary to examine a number of the prominent topographical or morphological features of this floodplain. Today, though decidedly altered by farming activity and levee construction by the U.S. Army Corps of Engineers, many of the natural morphological features present 200 or more years ago are still intact.

There are three basic physiographic features that dominate the landscape in the American Bottom. The most obvious feature and the driving force that shapes all other topographic features is the Mississippi River. Today this river occupies one channel that seldom deviates from its main course. This is due to the construction of levees along the river during the last half century by the U.S. Army Corps of Engineers.

For the greater part of its history, however, this segment of the river was composed of many channels. Its configuration throughout most of the Holocene Period can be characterized as a "braided system of many small shallow channels choked with sediment" (Smith 1988). This braided river system is responsible for a series of features that

characterize the landscape of the American Bottom.

The second dominant feature of the region is the limestone bluffs or cuesta sections that parallel both sides of the valley (Jelks, et al. 1989:17). These bluffs were formed as the braided channels of the river eroded away the limestone bedrock. Today the bluff escarpment extends from 128 meters above sea level (masl) at its base to 152 masl at its summit (White, et al. 1984:16).

The third and final dominant feature in the area is the valley section or floodplain. The floodplain in this section of the American Bottom is approximately 7 km wide and contains a number of distinct elements. The braided streams that formed the river system deposited silt along the banks of the channels. Periodically these channels would silt up and stagnant pools would form. A series of ridge and swale deposits were left behind by these ancient channels of the Mississippi. The third Fort de Chartres, for instance, rests upon a large ancient sand ridge that runs perpendicular to the main channel of the present-day river.

Many of the ancient swales fill with water during flood periods. This appears to have been a common occurrence during the eighteenth century, so much so that the French would call these features coulees. In fact one swale area between the Fort and the Michigamea Indian village would fill with water every spring and was referred to as the *Coulee du Noir*. This use of the term coulee should not be confused with its use in referring to the ravines or hollows in the bluffs that are formed by erosional waters draining the uplands.

Water also collects in marshes and sloughs throughout the area. In fact much of the area between the fort and bluffs (a distance of approximately 5 kilometers) was marsh during the eighteenth century. These areas of low relief hold water most of the year and are filled with flora and fauna indicative of a marsh environment. Sloughs are much deeper pockets of old river channels that have been cut off from the main channel by silting. Sloughs are deep and take on a lacustrine characteristic.

Finally water run-off from the bluffs or cuesta areas of the Bottom

is carried by various streams or creeks that have cut across these sand ridges and swales over the past centuries as they make their way to the river. In more recent time these creeks have been channelized by farmers and various local government agencies and are used today along with the levees as a system of flood control.

THE POST-OCCUPATIONAL HISTORY: A CENTURY OF RUINS

The abandonment of Fort de Chartres by the British in 1772 marked the end of colonial occupation in the Illinois Country. It also marked the beginning of a new era in the fort's history. For the next two centuries, the fort would lie in ruin. Local inhabitants first pillaged items of interest and the environment of the American Bottom wore down the remains. Second, the fort was once again occupied, but this time by tenant farmers. Finally, in the twentieth century the fort would be reconstructed for interpretive and historical purposes.

This post-occupational period can be divided into three distinct

phases:

- 1) The Reservation Period (1788-1848)
- 2) The Farm Period (1849-1913)
- 3) The State Park/Historic Site Period (1914 - present)

RESERVATION PERIOD (1788-1849)

Though Fort de Chartres itself was abandoned and most of the British troops were withdrawn from the Illinois Country, a small garrison was posted at Fort Gage, the former Jesuit compound in the town of Kaskaskia. By 1776 a rebellion had broken out in the British Colonies along the east coast. The entire military garrison at Kaskaskia was removed and Philippe Rocheblave was appointed agent for the British in the Illinois Country.

Rocheblave was a native French nobleman who emigrated to the New World in 1751. He subsequently fought against the British with the rank of ensign in the French Army during the French and Indian War. At the close of that war the governor of Louisiana accused him of collaborating with the enemy. Before leaving Kaskaskia with the

remainder of British troops, Captain Hugh Lord left Rocheblave in charge of British governmental affairs in these western villages (Alvord 1922:318).

On July 4, 1778, Lieutenant Colonel George Rogers Clark of the Continental Army, after marching across the Illinois wilderness from Fort Massac on the Ohio River to the village of Kaskaskia with about 175 men, seized the territory for the American forces. Clark's forces met no resistance from the local inhabitants. They were predominately of French descent, and the government of France sided with the American colonists early in 1778.

British occupation changed the political geography of the Illinois Country. Fort de Chartres was no longer the focus of government policy and colonial administration. Those functions were moved to Kaskaskia, and Fort de Chartres as a physical structure fell into ruins.

Documents suggest that between 1772 and 1787 local inhabitants began dismantling Fort de Chartres. A requisition by a military official, Lieut. M. Joseph Janez, filed at the Cahokia court house in January, 1787

states:

...that all persons or person, who after this date shall commit or cause any depredation, robbery or destruction either at Fort de Chartres or at the former college of the Jesuits at Kaskaskia or at the old fort on the mountain which commands the village or any storehouse or public building, they may expect that they will be punished very severely, since therefrom depends the welfare of a government which desires to be just and equitable.

Every person who has in his possession anything belonging to the public is notified to return it as soon as possible. (Alvord 1907: 495-97)

In 1788, George Morgan, acting as an agent for an association of sixteen investors known as the New Jersey Society, petitioned Congress for permission to purchase two million acres of land in the area that became known as the Northwest Territories:

Beginning at the River au Vase where the line of the army lands extended due west from the mouth of the little Wabash River shall strike the said River au Vase, thence due north until a due east line extended from the Mississippi River at the mouth of Wood River shall intersect the same, thence due west to the Mississippi River at the mouth of Wood River aforesaid, thence

down the Mississippi along the Boundary Line of the United States of America to the Mouth of the River au Vase, thence up the said River au Vase along the several counties thereof to the place of beginning. (Morgan 1788: 496).

Later in this petition it became clear that this group of investors considered the river system of this area to be a natural waterway for future fur trade routes:

Your Memorialists [term used to refer to those petitioning Congress] are of opinion that this is the natural channel for 9/10ths of the rich fur trade which is at present carried to Canada as returns may be made to these States in twelve months which require three and often four years to be made to Montreal, from the difficulties of the navigation and numerous portages by the Lake of the Woods to the northern sources of the Mississippi, from whence the richest furs are derived. (Morgan 1788: 497)

On June 20, 1788, Congress resolved to grant Morgan and his associates title to the land they requested for a price of 2/3 dollar per acre. There were some conditions to this agreement, however. French inhabitants of Illinois at Kaskaskia, Cahokia, Prairie du Rocher, St. Phillippe

and Vincennes had petitioned Congress in August 1787, to recognize and affirm their right to continue to own and occupy property they had purchased or settled under the French regime. Congress incorporated these concerns into the act of 1788 providing that land owned by the 'ancient inhabitants' would remain in their possession. In addition Fort de Chartres was set aside as a reservation:

That whenever the French and Canadian Inhabitants and other settlers aforesaid shall have been confirmed in their possessions and titles and the amount of the same ascertained, and the three additional parallelograms for future donations and a tract of land one mile square on the Mississippi extending as far above as below for Chartres and including the said fort, the buildings and improvements adjoining the same, shall be laid off: the whole remained of the soil within the reserve limits above described shall be considered as appertaining to the general purchase and shall be conveyed accordingly. (Continental Congress 34: 251)

Until 1848 the site of Fort de Chartres remained in the possession of the United State Government as a reservation against which land claims made by the original French inhabitants or their descendants might be

settled.

The Congressional act of 1788 prevented any settlement within a square mile of the fort. Inhabitants of the surrounding area, however, frequented the fort to remove material for building, as suggested in the following account by Major Amos Stoddard of the U.S. Army Corps of Engineers during his survey of the Mississippi River Valley in 1804 immediately after the Louisiana Purchase.

Its figure is quadrilateral, with four bastions, the whole of which is composed of lime-stone, well cemented. Each side measures about 340 feet. The walls are fifteen feet high, about three feet thick, and still entire. The stone walls of a spacious square of barracks, are also in good preservation, as likewise a capacious magazine, and two deep wells very little injured by time. Each port of loop hole is formed by four solid clefts or blocks of what is here called free stone, worked smooth, and into proper shapes. All the cornices and casements about the gates and building are of the same material, and appear to great advantage. The area of this fort is now covered with trees, which are from seven to twelve inches in diameter. In fine, this work exhibits a splendid ruin. It was originally intended as a place of refuge for the inhabitants of the adjacent country in time of war. Some years after it was

built, the Mississippi broke over its banks, and formed a channel so near the fort, that one side of it, and two of its bastions were thrown down. This circumstance induced the English to abandon it in 1772; and since that period the inhabitants have taken away great quantities of materials from it to adorn their own buildings. (Stoddard 1812: 234)

Stoddard's chronology of the events leading to the fort's abandonment is confused, i.e., the Mississippi did begin to undermine the river bank adjacent to the wall in the early 1770s, but the fort was abandoned before the river destroyed any of its walls. It is interesting to note, however, that within thirty years of its abandonment Fort de Chartres was covered with vegetation.

During this reservation period, the fort remained a curiosity for adventurous travelers. Prominent among these was John Reynolds, a Governor of Illinois in the 1830s and author of a number of works on early Illinois. In one he described a visit to Fort de Chartres:

[It] is an object of antiquarian curiosity. The trees, undergrowth, and brush are mixed and interwoven with the old walls that the place

has a much more ancient appearance than the dates will justify. The soil is so fertile that it forces up the large trees in the very houses which were occupied by the British soldiers. (Reynolds 1852: 47)

In addition to written accounts, one map of the fort ruins was made by surveyors during this period. In 1820 Beck and Hanson published a map of the fort that they claimed to have made as a result of a survey of the ruins. Though they had accurately fixed the general location of a number of features subsequently discovered by archaeologists and others, the overall shape of the fort is not accurate. They may have had some trouble making accurate measurements due to the extensive growth of vegetation over much of the fort by this time (Figure 3.1).

THE FARM PERIOD (1849-1914)

Between the years 1847 and 1855, the U.S. Congress passed a series of bills that later became known as the Homestead Acts. During this period, grants of land in the public domain were given generously to Mexican War veterans and their heirs. In addition large grants were given to the states and railroad companies to aid in the construction of

FIGURE 3.1
Ruins of Fort de Chartres (Wild 1842)



RUINS OF FORT CHARTRES.
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a rail transportation system in the West (Gates 1931:217).

It was during this period that a James L.D. Morrison of St. Clair County (about 20 miles north of Randolph County in which Fort de Chartres is located) received a patent deed for 140 acres of land, which included the site of Fort de Chartres. Within a year Morrison divided the property, cutting the fort in half with a line stretching from the land gate to the water gate and sold each half to different buyers.

Examination of title records at the Randolph County Court House suggests that these parcels changed hands frequently, and at times some prominent citizens of Randolph County, e.g., F.W. Brickly and his relatives, owned the property. Such frequent exchange of this property suggests that the owners were not always denizens and usually rented the land to tenant farmers.

There is one published account of a visit to Fort de Chartres during this period. Edward Mason (1839-1898) was a Chicago Lawyer and an

amateur historian. He was instrumental in setting up a program for the purchase of original documents by the Chicago Historical Society and himself procured a number of documents from the Randolph County Courthouse (the Illinois County in which Fort de Chartres and Kaskaskia are presently located) related to French and British occupation of Illinois in the eighteenth century (Beers 1964:26).

In 1879 he visited Fort de Chartres, and in a paper delivered the following year before the Chicago Historical Society, he provided a description of the Fort as it appeared during this farming period.

Entering the enclosure through a rude farm-gate, which stands just in the place of its lofty predecessor of carved stone, the line of the walls and the corner bastions can be readily traced by the mounds of earth covered with scattered fragments of stone, beneath which, doubtless, the heavy foundations remain, except at the corner swept away by the river. On two sides the outline of the ditch can be seen, and the cellars of the commandant's and intendant's houses, and of the barracks, are plainly visible, half filled with debris..... One angle of the main wall remains, and is utilized as the substructure of a stable. Two rude houses, occupied by farm tenants, are within the enclosure, which has been cleared of trees,

save a few tall ones near the magazine and alongside the ditch. In front, the open ground is open and under cultivation....

Yet, though so much has gone of the ancient surroundings and of the fort itself, it was an exceeding pleasure to find the old magazine still almost complete. It stands within the area of the south-eastern bastion, solidly built of stone, its walls four feet in thickness, sloping upward to perhaps twelve feet from the ground, and rounded at the top. It is partially covered with vines and moss. (Mason 1881:46-47)

There are a number of undated photographs in the state archives showing run-down farm buildings sitting atop the limestone rubble that was once the fort. These photographs most likely date to the end of this period.

STATE PARK/HISTORIC SITE PERIOD (1914 - PRESENT)

In 1914 the State of Illinois purchased the land upon which the ruins of the third Fort de Chartres lay. By this time the powder magazine was the only structure that remained intact. The State Park/Historic Site Period is well documented. There are a number of letters and files pertaining to construction and maintenance activity at the site during the past 85 years. They provide the archaeologists and architects involved in the reconstruction of Fort de Chartres with valuable

information on landscape changes and modifications made to the ruins that resulted in the reconstructed Fort de Chartres seen by visitors in the latter half of the twentieth century, over two hundred years after it was first constructed.

The site of the third Fort de Chartres became an important recreation center for the people living in the area. Site records indicate that on some Sunday afternoons in the summer during the 1920s and 1930s, five to six thousand people would picnic on the grounds of the fort. To enhance its appeal as a recreation area, the State of Illinois undertook a number of site improvement projects. The following chronology of landscape alteration and construction projects was derived from State of Illinois records:

- | | |
|---------|---|
| 1913-20 | Farm buildings razed, park cleared and foundations capped with new construction to height of about 2 feet. |
| 1922 | Bank of earth 200 feet long, 20 feet wide and 4 feet high removed from "behind the Powder Magazine" by Dan Brewer, site custodian. Identification or origin of this feature not clear from the records. |
| 1925 | Dan Brewer removes two wagon loads of rock, iron and wood from the well in the cannon bastion. This was done because the well was used for fresh |

drinking water. The records suggest that it began to smell and there was some concern about health hazards from drinking the water.

- 1928 Museum and custodian's quarters built on foundations near the west bastion.
- 1930 Garage built near well in south bastion.
- 1936 Guard house built on foundations adjacent to museum completed by local craftsman with stone quarried by prisoners from Menard Prison. Work on Land Gate begins.
- CWA (public works) dig a ditch to the east of the fort for drainage purposes. It was later completed by CCC labor. This ditch is the present ditch along the east side of the fort that at one time (prior to construction of the levee) circled around back of the fort and then drained into the Mississippi.
- 1941 Work on Land Gate completed.
- 1944 Massive flooding - boat needed to get to site.
- 1946 To destroy chickweed in and around the fort the land was burned, plowed and reseeded.
- 1948 Construction on levee begins.
- 1972 First archaeological investigation takes place
- 1980s Construction of north wall begins.

Construction and landscape operations during this period were

the most extensive in the history of the site. In addition, with the emphasis on recreation and, more recently, "Living History" events at the fort, the site is more heavily used today than in either the eighteenth or nineteenth century.

During the course of excavation, it was clear at times just how much of this activity affected the archaeological record. Many of the larger metal artifacts like cannon parts have disappeared over time. Most surface debris either directly deposited in the eighteenth century or deposited as the site deteriorated during the early nineteenth century has been removed. What remains intact are subsurface features - particularly those created during the construction of the fort.

CHAPTER FOUR

HISTORY OF ARCHAEOLOGICAL RESEARCH

Reconstruction efforts at Fort de Chartres prior to the 1970s were accomplished without the benefit of historical or archaeological research. Since there were no known architectural plans of Fort de Chartres that had survived into this century, structures built during the 1930s and 1940s were based on general principals of style developed by the National Park Service for Fort Niagara. Furthermore, some archaeological features were destroyed by maintenance activity - most notably the well in the north bastion was cleaned of all debris in 1925, and an unidentified linear mound-like feature behind the powder magazine bastion was leveled.

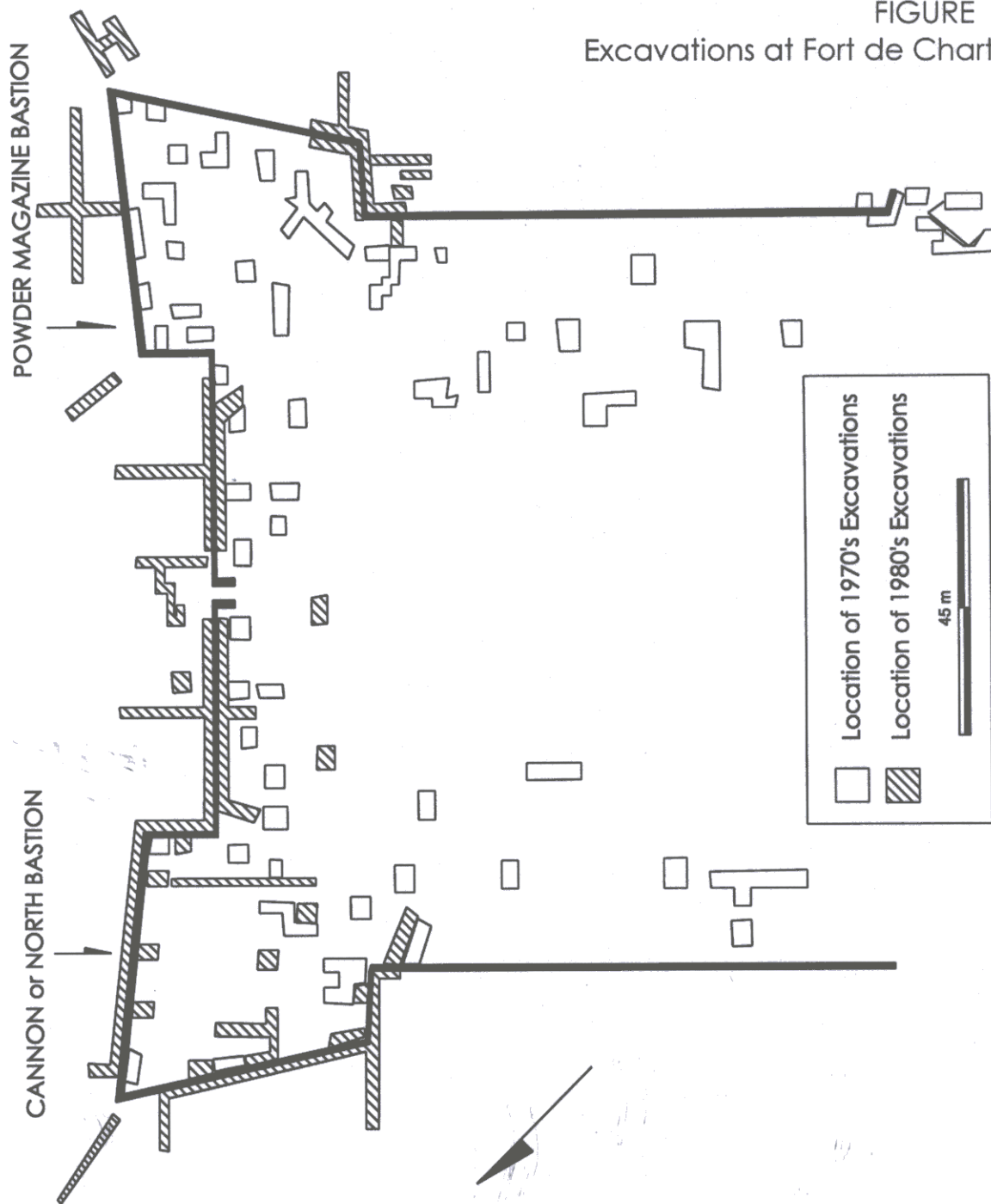
Beginning in the 1970s, however, concern developed for more accurate reconstruction and interpretive programs at the Fort. Consequently, the first systematic excavations were conducted at the Fort in 1972 by Margaret Kimball Brown. Brown became interested in the area while doing dissertation research on historic period Illini Indian groups. In 1971 she conducted excavations at the site of the

Michigamea Indian village located about a mile north of the fort. This site was occupied by the Illini between 1720 and 1752 (Brown 1973:91). After concluding excavation at the Indian village and finishing her dissertation, Brown was contacted by the State of Illinois to conduct test excavations at the third Fort de Chartres in preparation for further reconstruction.

Brown conducted initial test excavations during August of 1972 in and around the powder magazine bastion, the north bastion, and between the barracks and curtain along the west curtain wall (Figure 4.1). During this excavation, two hitherto unknown structural features were discovered: the palisade trench that formed the interior retaining wall of the banquette and sets of drains that flanked the bastions. At the time of discovery, however, the identity and function of these features were unclear (Brown 1975:95). Further excavation in 1974 provided information necessary to identify these features.

In addition three burials were excavated in the north bastion area. Preliminary analysis suggests that the remains were Indian and probably

FIGURE 4.1
Excavations at Fort de Chartres



Please note that the side of the fort adjacent to the Mississippi River was destroyed by the River in the 1770s.

interred in the banquette sometime after the fort was abandoned. Excavations in this area also uncovered large areas of mortar deposits. It appears that these were areas devoted to mortar manufacture during the initial phases of construction of the third fort (Keene 1988: 4.2)

Brown conducted further excavations at Fort de Chartres in 1974. During this field season, work was conducted on the banquette palisade trench along the north curtain wall and a number of the drains. In addition excavation units were placed along the interior of the wall in both the north bastion and the powder magazine bastion.

These first two seasons of excavation provided important information on structural remains of the stone fort (Brown 1976). The location of the banquette and its palisade trench in relation to the north curtain wall, the powder magazine bastion wall and portions of the north bastion wall were delineated. In addition, the discovery of stone drains suggest that the engineering of water removal at the fort was important. Finally, by excavating test units at various locations along the fort wall, the depth of the foundations was determined.

Determining the depth of the foundations at the fort proved to be crucial for reconstructing the original height of the fort walls. As mentioned previously, by 1914, when the State of Illinois purchased the fort site, none of the fort walls still stood. Documentary sources from the eighteenth and nineteenth centuries contain conflicting accounts concerning the height of the wall (Orser 1977; Keene 1988). In order to determine the height of the wall accurately, scholars used an eighteenth-century engineering formula originally employed by military engineers in constructing fortifications. This formula requires, however, that the thickness of the wall at its base be known. The 1974 excavations provided this crucial information.

In 1975, excavations continued under the direction of Margaret Brown with funding from the Illinois Department of Conservation. Using these funds to conduct a field school in association with Southern Illinois University at Carbondale, Brown's focus moved away from structural concerns. Though some excavation units were placed in the gorge of the north bastion to define further the extent of the banquette in this area, others were placed in eighteenth-century activity areas (Orser

1977). Testing focused on the east barracks structure and the bake house area.

In addition to standard excavation procedure, subsurface testing with a cesium magnetometer was conducted in a field adjacent to the fort. Documentary sources suggested that an Indian guest house was located some 78 meters north of the fort (Orser 1977:52). In an attempt to locate this structure, Bruce Bevan of the University of Pennsylvania Museum's Applied Science Center for Archaeology conducted a cesium magnetometer survey in a field north of the fort. He plotted the results of this survey on a map and the excavation team placed a number of excavation units in areas of anomalous readings. Despite these efforts, remains of the alleged Indian guest house have yet to be uncovered.

The 1975 excavations substantially increased the number of artifacts in the Fort de Chartres assemblage. It became clear at the conclusion of the field season that the assemblage at Fort de Chartres did not conform to then current assumptions about French fur trade posts in North America:

When the artifact collection is considered, it is apparent that very few trade affiliated artifacts are recovered. It has always been assumed, considering eighteenth century economics, that Fort de Chartres probably shared the responsibility of trade item dispersal with the Kaskaskia area. A survey of the 1975 artifact sample indicates that less than two percent of the recovered material can be considered trade goods (Orser 1977:140).

1979-81 EXCAVATIONS

After a brief hiatus of three years, archaeological work at the fort resumed in 1979. Between 1979 and 1981 the State of Illinois contracted Melburn Thurman of the Old Missouri Research Institute to conduct excavations at the fort. Information and data collected during this period are fragmentary due to the fact that large portions of the field notes from this period were lost in a fire at Dr. Thurman's home.

However, the fire did not destroy all the information collected during these years. Most of the artifacts collected were not damaged, and provenance information on the field bags has enabled us to salvage portions of the data. In addition brief reports were filed by

Thurman with the State of Illinois at the conclusion of each field season. Though basically an account of how time and money were spent during the past field season, these summaries provide important information on excavation strategy and the amount of work completed.

Much of Thurman's work focused on re-excavation of a number of units completed during the 1972-75 seasons. Architects and engineers generated additional questions on certain structural features of the fort. These questions centered on the north curtain wall and its various elements. By exposing certain features again, i.e., a section of the ditch, three drains, and portions of the north curtain wall foundation, Thurman was able to collect additional data for reconstruction.

The most important contribution of Thurman's research, however, was his use of remote sensing techniques on the site. Thurman contracted Bruce Bevan of Geoscience Inc. to conduct remote sensing inside the north bastion and in two areas outside the west curtain and north bastion walls. Two different techniques were used.

Inside the north bastion Bevan used a ground penetrating radar system to map subsurface anomalies. According to Bevan's report, this system is designed to locate buried objects. He generated a map of the interior of the bastion, noting variations in the echo pattern that suggest the location of objects or structural features.

Outside the north bastion wall and the west curtain wall, Bevan employed an electromagnetic resistivity meter to plot subsurface anomalies. In the two areas outside the curtain wall, Thurman concerned himself with the location of the ditch that surrounded the fort. Bevan decided to utilize the electromagnetic system, reasoning that stone rubble from the fort buried in the ditch would produce higher electrical resistivity than the surrounding soil. This would enable them to map the location of the ditch surrounding the fort without extensive excavations.

Unfortunately, Thurman was unable to carry this work to completion, and he did not investigate the subsurface anomalies generated by these remote sensing techniques. The results of these

surveys, however, became crucial during the 1985-87 field seasons.

During this most recent period of excavation at the fort, extensive excavations were conducted in the north bastion and outside the north curtain wall of the fort. The results of the remote sensing assisted in the planning of excavation strategy and, in one case, the discovery of a new structure in the north bastion.

1985-87 EXCAVATIONS

In 1981, after the conclusion of Thurman's excavations, reconstruction activity at the fort began for the first time since the 1940s. With the information provided by archaeological excavations and historical documents, architects and engineers were able to reconstruct the wall surrounding the powder magazine bastion. Additional reconstruction of the entire north curtain wall, the banquette, the drains, the ditch, and the north bastion were scheduled for later in the decade.

In planning for this future construction, new questions began to surface concerning the interrelationship between the various elements

of the fort's defenses, i.e., the drains, banquette, curtain wall, and ditch. In addition, archaeologists for the State of Illinois felt that more intensive excavation was necessary prior to any further reconstruction in order to prevent possible destruction of archaeological resources.

In May of 1985 the State of Illinois contracted the Midwest Archaeological Research Center at Illinois State University in Normal, Illinois, to conduct extensive excavations at Fort de Chartres. At that time the Midwest Archaeological Research Center was under the direction of Dr. Virgil Noble who had conducted excavations and analysis of the artifact assemblage at the eighteenth-century French Fort Ouiatenon near Lafayette, Indiana, as part of his dissertation research (Noble 1983). Dr. Noble was aware that I had been an assistant field supervisor on the archaeological field crew during excavations at Fort de Chartres in 1974 and 1975 and was familiar with its archaeology. Consequently, I was asked to direct the field excavations at the Fort for the 1985 field season.

For the State of Illinois the purpose of the 1985 excavations was

twofold. First, a substantial amount of money had been appropriated by the State Legislature for partial reconstruction of the landward curtain wall at the fort. Reconstruction would require exposing the original foundations of the eighteenth-century fort. In this process archaeological deposits would be disturbed. Consequently, the chief archaeologist for the State of Illinois, Tom Emerson, requested that we subject all areas to be disturbed by construction activity to archaeological investigation.

Second, a number of archaeological investigations had taken place at Fort de Chartres in previous years. However, no comprehensive report had ever been completed outlining the history of the site and the analysis of archaeological material from the site. Consequently, we were required to compile all historical and archaeological information available concerning Fort de Chartres.

To date, a number of reports concerning the excavations at Fort de Chartres have been filed with the Illinois Historic Preservation Agency. Excavations at the fort between 1986 and 1990 have been run through

the Archaeological Research Center at Loyola University. The research presented here utilizes information from existing reports and hitherto unreported research in order to discuss the economic implications of eighteenth-century French colonial activity in the Illinois County.

During the 1985-87 excavation seasons, a number of structural features in the fort's rampart element (the ditch, wall, banquette, and drains) were excavated. In addition to structural elements other features were investigated. A slaking pit, used by masons in the 1750s, was discovered and subsequently excavated. A new structure was discovered and partially excavated in the north bastion in 1986 (Keene 1988). Finally, additional funds awarded during this period were used to identify faunal remains previously recovered on the site (Martin 1988).

These excavations and some additional consultation with documentary sources provided essential information on eighteenth-century construction procedures used for the rampart elements (ditch, wall, drains, and banquette) along the north wall and the north bastion of Fort de Chartres (Keene 1988). In addition, the discovery of the

slaking pit provided some insight into construction activity at the Fort and the ways in which the French masons and engineers organized construction tasks. Finally, a substantial number of artifacts were recovered during this three-year period to add to the site's assemblage. As will be demonstrated, the analysis of the items in this assemblage proved crucial in understanding the role the Fort played in the colonial economic system of the eighteenth century.

It should also be noted that archaeological investigations were conducted on portions of the first Fort de Chartres. Terry Norris, Army Corps of Engineers archaeologist for the St. Louis District, discovered some aerial photos of the Fort de Chartres area taken in 1928. He noticed a rectangular stain on the ground about one quarter mile south and east of the current or third fort. This was in an area where an earlier collector, Irvin Peithman, suggested that one of the earlier forts was located (Downer 1980).

The Illinois Department of Conservation contracted for soil tests (Woods 1988) and a magnetic survey (Weymouth and Woods 1984) of

the alleged location of the fort site now known as the Laurens Site. The results of these tests showed a series of anomalies that suggested a fort-shaped configuration. With the results of these tests in hand, Jelks and Eckberg of Illinois State University conducted sporadic test excavations in 1982 and 1983 (Jelks, Eckberg, and Martin 1989).

The results of these test excavations suggest that the Laurens site is indeed a two-bastioned, wooden-palisade fort. The artifact material recovered from features at this site suggest an occupation date during the first half of the eighteenth century. This information suggests that the Laurens site is most likely the site of the first Fort de Chartres constructed in 1719 (Jelks, Ekberg, and Martin 1989). To date the location of the second fort is unknown.

CHAPTER FIVE

FORT CONSTRUCTION AND THE ARCHAEOLOGICAL RECORD

The current site of Fort de Chartres is approximately 6 acres in size. It is located 4 miles from the bluffs on the Illinois side of the Mississippi River and 1 mile from the main channel of the Mississippi River. The Mississippi River has been channeled and moved west of its eighteenth-century channel by the U.S. Army Corps of Engineers over the past two hundred years.

Visitors to the site enter through the land gate or “back door,” of the fort. The water gate or main gate was destroyed by flood waters in the 1770s. Today a levee is located immediately adjacent to the area where the water gate was once located and the fort is surrounded by flat agricultural land. Portions of the fort wall and two buildings have been reconstructed in order to give visitors a sense of its size and mass.

The most obvious difference between eighteenth-century colonial forts, either French or British, is their architecture. There is no discussion in any of the archaeological literature concerning the different

architectural features and construction techniques. In fact, in the Midwest, it has been the general assumption that fort construction was primarily determined by locally available building materials. Hence Fort Michilimackinac, located in the timber-rich northern forests, was constructed of wood pickets and Fort de Chartres, along the limestone bluffs of the American Bottom, was constructed of limestone.

Though availability of construction material may indeed influence architectural style and construction techniques, it is inappropriate to assume that available resources are a primary factor in planning fort construction. Even the first edition of the Encyclopedia Britannica, which contains an extensive discussion on fortifications, draws this comparison between fortifications made of wood and those made of stone:

Fortification is either ancient or modern, regular or irregular. Ancient fortifications, at first, consisted of walls or defences made of trunks and other branches of trees mixed with earth, to secure them against the attacks of the enemy. This was afterwards altered to stone walls, on which were raised breast-works, behind which they made use of their darts and arrows in security. Modern fortification is that which is flanked and defended by bastions and out works, the ramparts of which are so solid, that they cannot be beat down but by the continual fire of several batteries of

cannon. Regular fortification, is that built in a regular polygon, the sides and angles of which are all equal, being commonly about a musket-shot from each other. Irregular fortification, on the contrary, is that where the sides and angles are not uniform, equidistant, or equal; which is owing to the irregularity of the ground, valleys, rivers, hills, and the like (Encyclopaedia Britannica, 1st ed., s.v. "fortifications").

This citation suggests that wooden picket forts were primitive structures unlike the contemporary stone forts that were "modern." By this definition Fort de Chartres was a modern facility whereas Ouiatenon and Michilimackinac were primitive.

During the 1985 excavation season at Fort de Chartres, the field investigation team uncovered a number of structural features at the site that provided valuable information on the construction techniques used in building the fort. Excavation techniques used in 1985 allowed for the opening of large trenches that exposed limestone walls, drains, the ditch, and slaking pits. These large features were visually dramatic and allowed the investigation team to experience the size and scale of this structure.

The often overlooked and most obvious source of data on

Colonial sites, and more often on later historic sites, are the structural evidence. This evidence provides valuable information on availability of raw materials, tools, technical and engineering knowledge and, as in the case of Fort de Chartres, social structure.

The forts with wooden stockades were constructed by soldiers using customary techniques of eighteenth-century outpost fortification design. The construction of the limestone fort was directed by an army engineer educated in Paris. He in turn was assisted by a small group of masons who were considered skilled craftsmen in the eighteenth century. These masons directed the soldiers who were used as common labor in the construction of the fort walls. Stockade forts took only manpower. Limestone fortifications required capital investment (one of the biggest problems in building the stone fort was getting funds from the French crown), engineering expertise, and skilled craftsmen.

The main point is that the differences between Fort de Chartres and Forts Michilimackinac and Ouiatenon are not attributable simply to the availability of building material. The differences in construction and

materials reflect social and economic differences at these colonial outposts.

A BRIEF HISTORY OF FORTIFICATION

As an architectural feature, a fortification finds its immediate origins in the medieval castle. A castle was designed to prevent offensive forces with crossbows, catapults, and scaling devices from penetrating the defenses. Consequently, the higher and steeper the wall the more impenetrable the defenses. A moat around the castle prevented offensive troops from getting close enough to the wall to scale it. The projectiles fired at the castle wall never had force strong enough to penetrate even the thinnest of stone walls. The thickness of the wall was a function of support and thereby was determined by height (Hale 1965:74).

The introduction of gun powder into fifteenth- and sixteenth-century European warfare not only altered the characteristics of offensive weapons, but also the architecture of defensive structures. Artillery fire became more accurate at greater distances, and heavier projectiles could shatter the thin high walls of traditional castle structures

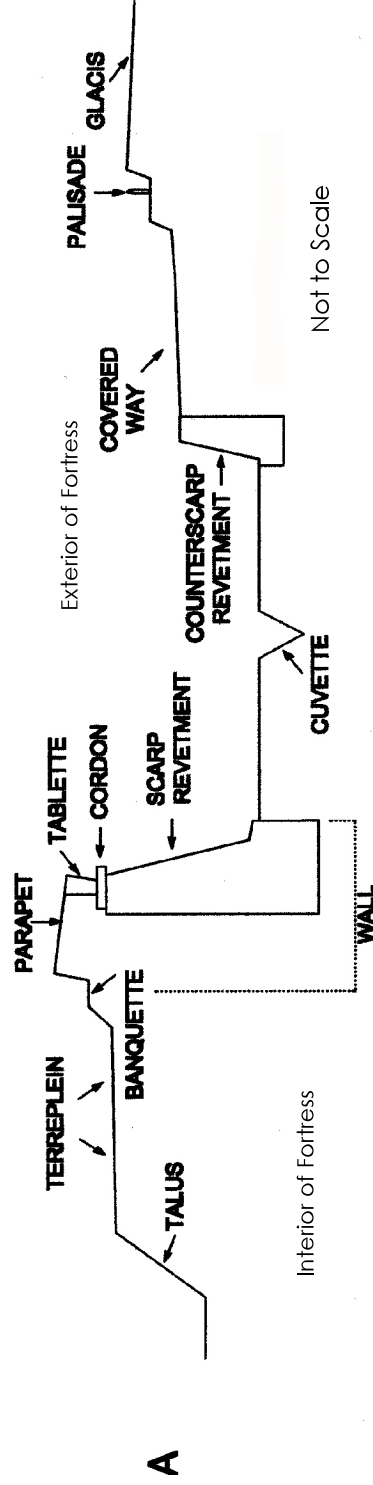
(NcNeill 1982:89). In addition large siege guns became truly mobile, and densely compact iron shot replaced missiles of stone (Duffy 1985:1).

It was necessary for the walls of defensive structures to become wider and the wall or revetment to be slanted in order to deflect artillery bombardment. In addition, it was discovered that low walls backed with an earthen embankment more easily withstood the impact of cannon-fired projectiles than did the thin high walls of the castle (Duffy 1979:2). The wall, then, became part of a more complex rampart system that might contain a terreplein, banquette and parapet. Figure 5.1 illustrates a cross section or profile of an ideal eighteenth-century fortress.

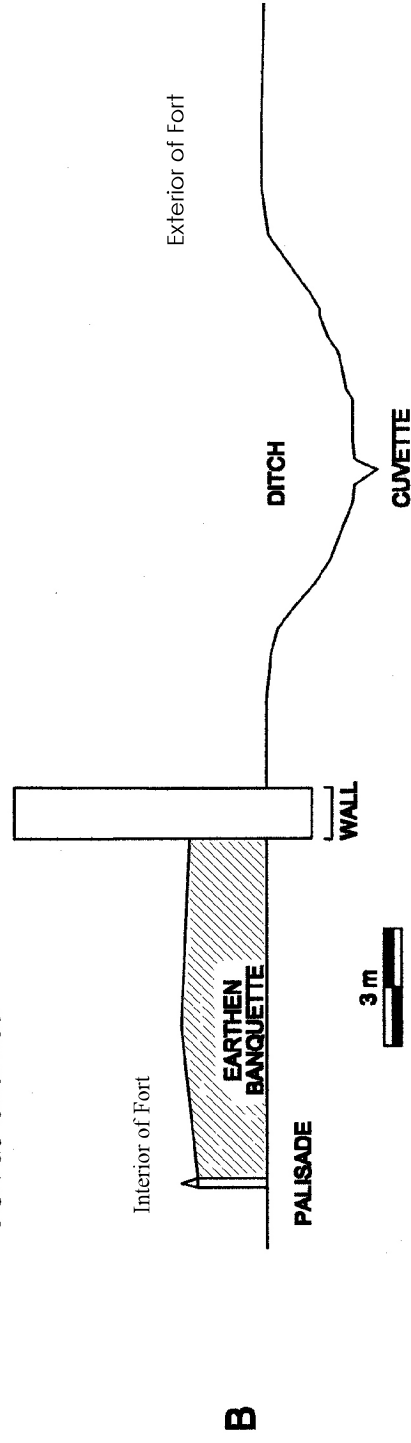
In profile, the rampart system contained three essential architectural elements. The first or interior element contains three sub elements: the *talus*, which referred to the rearward slope toward the interior of the fort; the *terreplein*, or wide earthen platform that served as the main artillery fighting platform; and the *banquette*, or small stepping platform that served as an infantry firing-step.

FIGURE 5.1
Cross Sections of Fortification Elements
(A) a standard profile showing all possible elements, and
(B) the profile at Fort de Chartres

Typical Fortification



Fort de Chartres



The second element is the wall or revetment. It is composed of the *scarp revetment* or outer retaining wall; the *cordon* or rounded coping stone that topped the wall; a *tablette* or stone that acted as a crown atop the cordon; and a *parapet* that was usually an earthen cap or embankment behind which artillery troops would lie for protection.

The third and final element of the rampart system is composed of external defensive features. These features were designed to impede offensive troops from reaching the scarp revetment, thus prolonging their exposure to artillery fire as they approached the fortress. The *main ditch* is a deep wide expanse immediately adjacent to the scarp revetment. It contained a *cuvette* or small drainage ditch that helped to keep the main ditch dry. The *counterscarp revetment* is a retaining wall on the outer side of the ditch. The *covered way* is an infantry position for defensive troops atop the counterscarp. The *palisade* is a fence of close set wooden stakes that provides cover for infantry on the covered way and also acts as a retaining wall for the *glacis*. The final or outermost feature is the *glacis* or slope descending from the covered way. The *glacis* was often mined in order to impede the progress of

offensive troops trenching their way toward the fort.

A plan, or aerial view of a fortification (see Figure 4.1) reveals additional defensive elements. Fort de Chartres, along with almost all forts built in the seventeenth and eighteenth centuries, is known as a bastioned fort. A *bastion* is a four-sided element that projects from the main rampart. A bastion contains two *face* walls each connected to the rampart by a *flank* wall. The stretch of rampart running from one bastion to another is referred to as the *curtain wall*.

During the sixteenth and seventeenth centuries, European warfare became a matter of engineering in both the areas of defense and offense. Under Louis XIV of France, Sebastien Le Prestre de Vauban (1633-1707) became the foremost master of military engineering. Vauban (1740) developed a system of engineering that embraced both the strategy for excavating trenches in the assault on fortifications and a defensive fortress system that could thwart attacking forces. The limestone Fort de Chartres, built in the Illinois Country in 1754, was constructed under the military engineering principles developed by

Vauban.

ARCHITECTURAL PRINCIPLES OF FORT CONSTRUCTION

Some of our best information on Vauban's engineering principles come from sources other than the master himself. The reader should notice that all Vauban's works were published posthumously. Vauban himself refused to allow any of his works to be published and insisted on their secrecy. All of his works were passed to army commanders only through direct mediation with the King (Pollak 1991:xvii). Army engineering in the seventeenth and eighteenth centuries was treated as a state secret.

In 1746, an English professor of military artillery and fortification, John Muller, published a textbook for his students on the construction of fortifications. In this treatise, he outlined and expanded upon the methods and principles used by Vauban, and divided the "art of fortification" into two parts: the elementary, or theoretical, and the practical (1746:18). The construction of a good defensive fortification had to start on paper - the theoretical aspect of fort construction. Using certain principles of geometry, with the background of artillery

capabilities, an engineer would design a fort. Muller, in an attempt to make these theoretical procedures easy for his pupils, constructed a table (1746:28) that divided fortresses into four basic types based on the length of the exterior side (A-B) of the polygon. In addition, this table provided the lengths necessary for calculating the construction of a curtain wall and its end bastions so the entire fort would be symmetrical or 'regular.' A regular fortification, then, has elements that are symmetrical, i.e., bastions are all equal in size and shape, curtain walls are equal in length, etc. For the purpose of discussion, that table is reproduced here (Table 5.1).

Not all fortifications could be constructed solely on these principles since they are theoretical and do not take into account the variability of a landscape. In fact one of the strengths of Vauban's system lies in one of his maxims - suit the work to the terrain (Rothrock 1968:viii). Provided with ideal environmental circumstances, a symmetrical or 'regular' fortification could be designed and constructed based on the geometrical procedures presented above. But, as Muller (1746:139) pointed out, often a fort cannot be situated on a plain, and

the terrain in an area strategic to defense may be uneven and variable. In such a situation it may be necessary to build an 'irregular' fortification in which the elements are asymmetrical conforming to the landscape while still providing a suitable defense. This, according to Muller (1746:19), is the 'practical' aspect of fort construction.

In addition, Muller provided his students with a table (1746:50) that outlined the necessary thickness of the wall at its top and bottom for various wall heights. The formula for this calculation is simple: the height equals the thickness of the bottom of the wall minus the thickness of the top of the wall multiplied by five or:

$$h = 5(b-t)$$

where

h = the height of the wall as measured
from the bottom of the ditch.

t = the thickness of the wall at its top.

b = the thickness of the wall at its base.

TABLE 5.1
Muller's table providing measurements of curtain
elements for various fortress sizes (Muller 1746:28)

	Forts			Little Fortifications	Mean	Great
Side of the Polygon	80	90	100 110 120 130	140 150 160 170	180 190	200 260
Perpendicular	10	11 12.5	14 15 16	20 21 23 25	30 31	25 22
Faces of Bastion	22	25 28	30 33 35	40 42 45 47	50 53	55 60
Capitals of Ravelins	25	28 30	35 38 40	45 50 50 52	55 55	60 50

All measurements in this table are in French Toise.
 A Toise is approximately six (6) feet or 1.82 meters.

The strength of a fortress rested in its ability to thwart an artillery attack. "The heart of every fortification, whether ancient or modern, consists of some formidable obstacle to the progress of the enemy infantry" (Duffy 1975:47). An artillery attack was best thwarted by placing a series of impediments between the offensive and defensive forces. Where a castle had a high thin wall that was difficult to scale and easily separated opposing forces, the introduction of gunpowder and mobile artillery required a change in fort design.

The eighteenth-century rampart system (or *enceinte* in french) contained a number of elements designed to place an adequate distance between defensive forces and offensive artillery (Figure 5.1). More importantly, the rampart system was designed to place as many impediments to the advancing infantry as possible. Defensive forces could more easily monitor advancing troops and prepare cannon and mortar fire as needed.

ARCHAEOLOGICAL EVIDENCE OF CONSTRUCTION AT FORT DE CHARTRES

Archaeological investigation of the rampart system at Fort de Chartres began as early as 1972 with the exposure of the palisade

trench that formed the interior support wall of the banquette.

Successive investigations uncovered wall footings and foundations, sections of the original wall, and the ditch. In addition, drain structures that are directly related to the infrastructure of the rampart system were discovered, as well as remains of construction activity like slaking pits. Since Fort de Chartres is a small fort, the rampart was not as complex as the classic model in Figure 5.1 referenced above. It did, however, contain the essential elements.

THE BANQUETTE

One of the earliest discoveries during archaeological excavations at Fort de Chartres was the palisade trench. This formed the interior support wall of the banquette. It was first encountered during the 1972 excavations in the vicinity of the powder magazine bastion. Initially it was thought that this palisade trench might be the remains of one of the earlier Forts de Chartres. Further excavations in 1974 and succeeding years revealed that the palisade trench 'shadowed' the curtain wall. In fact it paralleled the north curtain wall at a distance of approximately 8.5 meters or 28 feet. This distance varies in the powder magazine

bastion in order to accommodate the powder magazine. It also appears to vary in the bastion behind the commandant's quarters. The extent of this variation is unclear at this time since the palisade trench has not been completely excavated. In fact, excavations in 1986 that attempted to locate the palisade trench in this bastion encountered instead the remains of a structure.

Almost no trace of the banquette was visible by the 1970s except for the area immediately behind the powder magazine where the ground level was approximately two to three feet higher than the surrounding ground surface. The only description of the banquette comes from the English occupation of the fort in which Captain Pittman writes to General Gage, "there is within the wall a small banquette intended for the Men to Stand on to fire out of the loop-holes, which is rais'd about three feet from the surface" (Pittman to Gage 1765).

Archaeological excavations along the north curtain wall revealed a layer of soil deposited by human activity. Geomorphological analysis of these soil layers suggest that they are not natural deposits. In

addition, they appear to have been deposited for a considerable time. Geomorphologist Lawson Smith (1988) suggests that these are displaced soils from the initial excavation and construction of the ditch surrounding the Fort.

This is as we would expect. The ditch and curtain wall trench would have been the first stages in the construction process at the fort. Soil from these would have been deposited within the perimeter of the soon to be constructed curtain wall.

In a fortress designed for artillery combat the banquette would have functioned as additional reinforcement for the wall and to absorb and dissipate the shock of cannon fire. Since Fort de Chartres was a small fort not intended to withstand cannon fire, the banquette appears to have served as additional support for the wall and as a causeway along the interior perimeter of the fort to facilitate troop movement to man the fort's cannon and to fire from the loopholes.

THE DITCH

The primary function of the ditch around a fortification was to act

as a barrier to advancing offensive troops as they approached the rampart. A ditch did encircle the third Fort de Chartres, and in the 1985 - 1987 excavations fourteen cross-section trenches were cut in order to investigate this element. The function of the ditch cannot be understood without some understanding of eighteenth-century military siege strategy.

Due to the limited range of eighteenth-century siege weapons, an advancing army was required to place its weapons close to the rampart in order to penetrate a fortress. In an attempt to get infantry close enough to the rampart to secure locations for cannon positions troops were required to dig trenches.

Trenching operations were usually begun at a distance well beyond the range of the fortresses' defensive weaponry - particularly mortar and rifle fire. These trenches would be excavated in various zig-zag and parallel patterns as they moved closer to the fortress. They would provide excellent protection and offensive positions for attacking troops. It is interesting to note that Vauban, though best known today

for his architecture and design of fortresses, was primarily concerned with the science of attack. Most of his writings focus on offensive strategy (Rothrock 1968:viii).

The first impediment encountered in the trenching operation would be the *glacis*. This earthen embankment around the perimeter of the enceinte required extra time and labor to excavate. In some cases the glacis would be mined by defending troops so that as the attacking troops dug through the glacis, the mine would explode. If the besieging troops penetrated the glacis, they would have easy access to the ditch. It was at this point that the attacking troops became vulnerable for the first time.

There were two types of ditches: wet and dry. Entry into a dry ditch would expose besieging troops to mortar and musket fire from the defensive army located atop the rampart. A wet ditch, with an ample supply of water, would hamper the forward movement of supplies and artillery. In addition, offensive troops breaking through the ditch wall as they dug their trenches could easily be drowned.

Probably the best ditches of all were those that combined the advantages of wet and dry. Coehoorn razed the floor of some of his ditches to within a few inches of the water table, so that the garrison could move freely over the surface, while the besiegers could not attempt to make a trench 'passage of the ditch' without being at once flooded out (Duffy 1975:60).

The size of the ditch element varied depending more on the amount of earth required for the rampart than on tactical defensive needs.

The size of the excavation for the defensive ditch would be proportional to the massiveness of the parapet [or banquette] that backs it up; but it does not harm to make the ditch a bit bigger, throwing some earth up on its outer side too and spreading it around (Vauban 1740:32).

The ditch around Fort de Chartres was investigated by cutting a series of trenches perpendicular to the ditch element. Though the stratigraphy in each of the ditch trenches is unique, there is a general pattern that we can summarize here.

Fort de Chartres rests on two distinct soil forms (Smith 1988). The

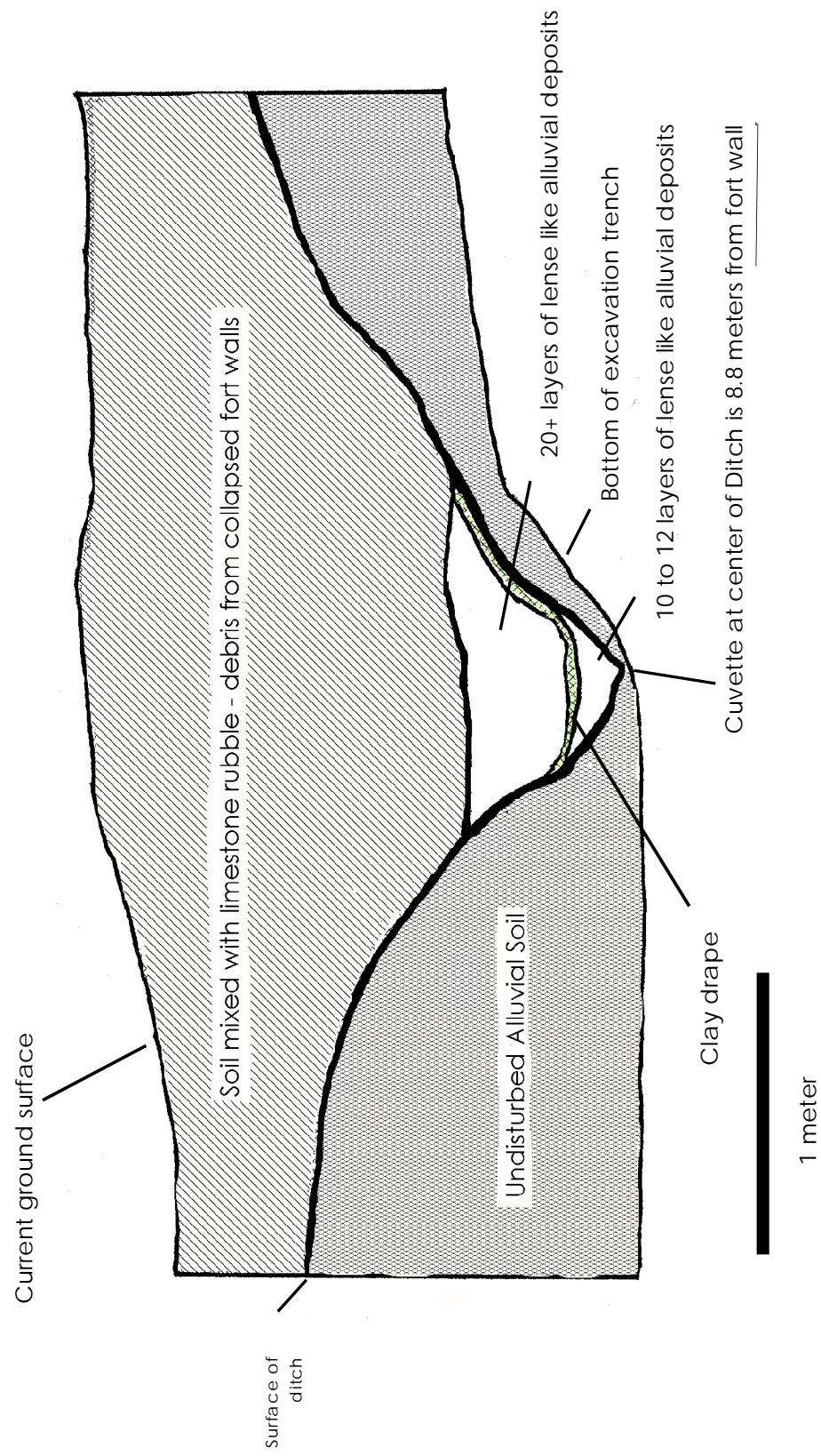
eastern half of the fort - that contains the powder magazine bastion - is built upon a sand ridge deposited by the Mississippi River early in the Holocene. The west half - the area from the landgate westward beyond the north or commandant's bastion - is also a high ridge, but it is composed of claylike soils formed when this area was a swale adjacent to the river channel early in the Holocene.

In constructing the ditch around the powder magazine side of the fort the French excavated a ditch (Figure 5.2) a little over a meter deep with a slight slope for drainage of rainwater. They found the soil extremely sandy and cut a *cuvette* in the bottom of the ditch.

The drainage of rainwater from a dry ditch could be effected by tilting the floor gently downwards in the direction of the enceinte, and leading the water away by a small ditch which followed the curve of the revetment. A common alternative was to cut a *cuvette*, a V-sectioned trench which ran round the fortress in the centre of the ditch. (Duffy 1975:60).

The soil on the west half, around the north bastion, was more claylike and firm. No *cuvette* was needed here as rainwater would flow easily (due to a slight pitch) on the hard clay floor of the ditch toward a

Figure 5.2
 Typical Profile of Ditch at Fort de Chartres
 This is the east wall profile taken from excavation unit 85M2
 outside the Powder Magazine Bastion



river drainage. The ditch was essentially bowl shaped with a more gradual slope on the curtain wall side than on the outside or *glacis* side of the ditch.

After ten or twelve episodes of flooding (represented by the lens-like river deposits on the east side of the fort) a clay drape was set in the ditch. This clay drape is the result of deliberate human activity. It appears that drainage on the east side (around the powder magazine) was so poor that some improvements had to be made. The ten to twelve episodes of flooding would correspond well with the 10 years of occupation by the French before the British assumed control of the fort.

The fact that all the soil deposits in the ditch in this bottom zone are river deposits and not cultural deposits is significant. Archaeological investigations fail to reveal any evidence of this ditch being used as a drainage for fort sewage. In fact, the construction of a cuvette on the east portion of the fort does suggest that its intended function was as a dry ditch.

After the fort was abandoned, this ditch began to fill with additional river silt. It is known that the fort and the area for one square mile around it remained government property until 1848 (Mason 1881:44) when it was sold as farm land. It appears that the artifacts and fort debris found in the upper stratigraphic levels of the ditch were deposited after 1848, when, for the first time in 75 years, considerable cultural activity once again resumed on the site.

THE WALL

The most obvious element of the rampart system is the wall, also referred to as the curtain or the revetment. It is the defining element of a fort and is most often composed of masonry. Limestone appears to have been the most common material, besides timber, used by the French in constructing forts in North America, although Fort Condi in Mobile, Alabama, was composed of brick.

By the time the State of Illinois purchased Fort de Chartres in 1914 the walls were no longer standing. Consequently, there are no modern descriptions or pictures of the wall ruins. In addition, research with

eighteenth-century documentary sources has failed to uncover any engineering drawings of this fortification. There are a number of descriptions of the fort wall, however, in late eighteenth- and early nineteenth-century sources.

The earliest description of the fort that provides actual measurements comes from a document known as the *proces verbal*. The *proces verbal* is the cessation document that contains an inventory of resources at the Fort. It was written both in English and in French on October 10, 1765. A translation of the French copy will be quoted here.

The height of the walls is eighteen feet; south curtain, on the river side, has eight buttresses and forty-seven loop-holes; the north curtain has eight buttresses and forty seven loop-holes; east ditto, ten buttresses and fifty-five loop-holes.

The bake-house bastion, at the southeast, has eight buttresses and fifty loop-holes, and eight embrasures; Prison ditto, at the southwest, eight embrasure; northwest ditto, eight buttresses, forty-nine loop-holes, and eight embrasures; the whole in cut stone; one cut stone sentry box in each bastion, overhanging the walls a cul de lampe with a cornice above, and vaulted, seven cut stone steps to get to it (O'Callaghan 1858: 1164).

In 1766, Captain Philip Pittman, an engineer in the British Army, visited Fort de Chartres in his tour of the Mississippi River Valley. An excerpt of his journal follows:

The fort is an irregular quadrangle, the sides of the exterior polygon are four hundred and ninety feet; it is built of stone and plaistered over, and is only designed as a defense against the Indians, the walls being two feet two inches thick, and pierced with loop-holes at regular distances, and with two portholes for cannon in the faces, and two in the flanks of each bastion; the ditch has never been finished; the entrance of the fort is through a very handsome rustic gate (Pittman 1770:45).

In addition, there were a number of accounts of the fort wall made by travelers and curiosity-seekers during the nineteenth century (Orser 1977). None of these descriptions is accurate enough for reconstruction or analysis.

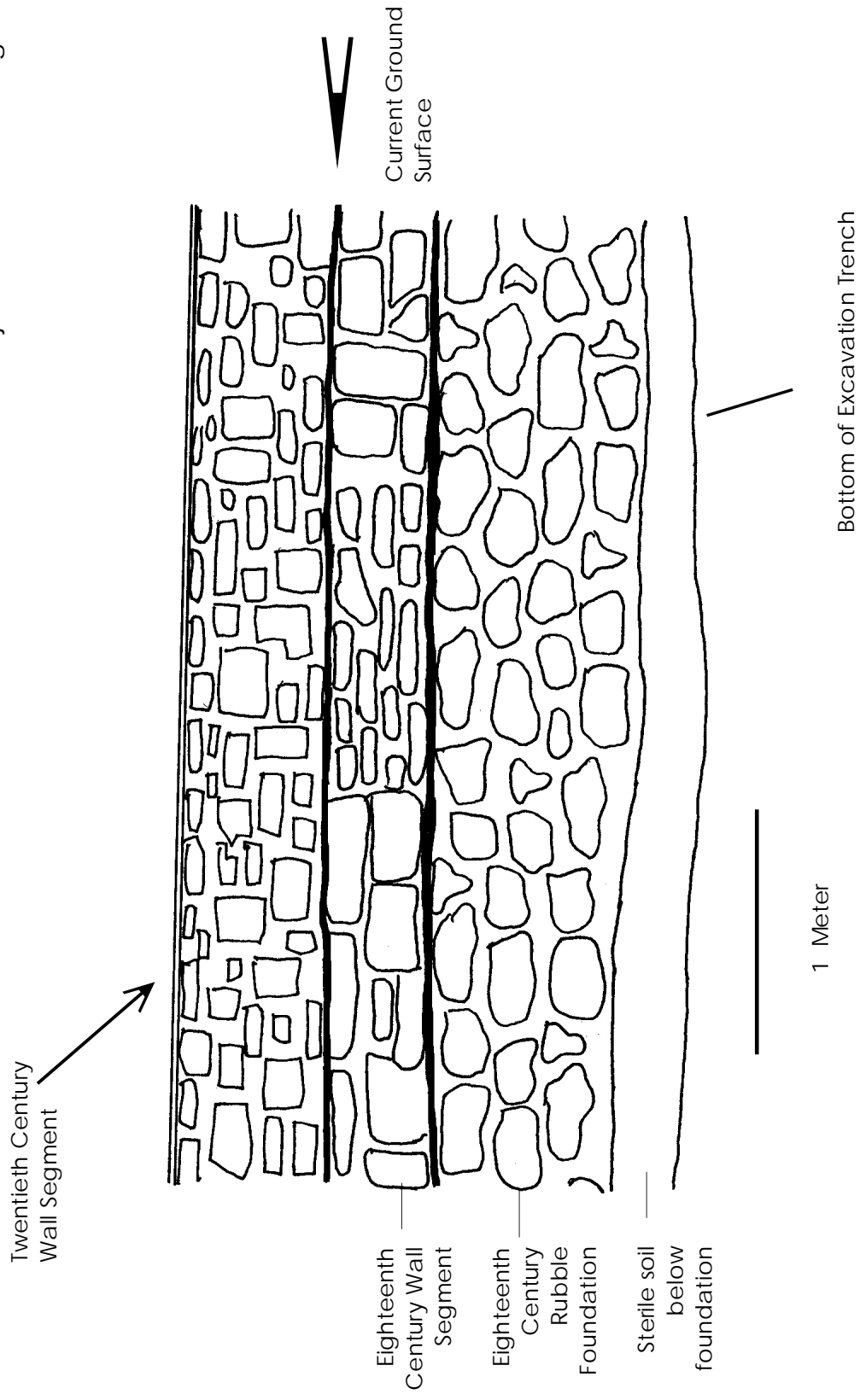
The extensive trenching along the curtain walls on the landward side of the fort during the 1980s enabled archaeologists to examine large portions of the buried remains that were difficult to examine in traditional square excavation units (Figure 5.3). Examination of large

sections allowed us to distinguish between the original foundation laid by the French, portions of the original wall that lay buried under the twentieth century ground surface, and the reconstructed wall built in the 1910s. Each of these construction episodes contains unique characteristics that aided in its identification.

FRENCH FOUNDATION. This layer is composed of limestone block rubble and lime mortar that was poured into a builders trench measuring approximately 1.5 meters in width (approximately 5 feet). The blocks were not carefully cut nor were they placed in any pattern. In addition the subsoil abuts directly against this layer suggesting that the trench was completely filled with the foundation rubble mixture. The average depth of this rubble foundation is approximately 1 meter.

Archaeological evidence suggests that after the builders trench was excavated to a depth approximately one meter below the eighteenth-century ground surface a footing of mortar was poured (it should be noted that the bottom of the builders trench follows the contour of the eighteenth-century ground surface and is not a level plane). After the

Figure 5.3
Profile of typical Face Wall at Fort de Chartres
This is the wall profile from excavation unit 85NC-C located along
the interior north curtain wall just west of the land gate.



footing dried, large limestone blocks and additional mortar were poured into the trench until filled. The wall was built on top of these large blocks.

FRENCH WALL. Sections of the original fort wall still exist. This wall sits directly atop the foundation and is composed of cut limestone blocks dressed with lime mortar. The size of these blocks varies throughout the length of the wall. Some blocks are more than two cubic feet and some are as small as one half cubic foot. The reason for the variation in size is not clear at this time. Since the wall may have been plastered over, as the quote from Pittman above suggests, the blocks may have dressed at the quarry site without regard for size or overall appearance.

1910s WALL. This layer of the wall sits atop the remaining original wall except in places where there is no original wall. In these locations it rests upon the original foundation. This wall is composed of limestone blocks dressed with Portland Cement. Portland Cement did not come into use until the late nineteenth century and is visually distinguishable from the lime mortar used in the eighteenth-century construction.

The careful observer will note that the powder magazine bastion and the commandant's bastion (also referred to as the north bastion) are not symmetrical, making Fort de Chartres an irregular fort. Pittman, noted this as did Beck in the 1820s (Beck 1823). Archaeological excavations in the commandant's bastion uncovered a substantial lens of mortar at the bottom of a builders trench, running almost parallel to the existing foundation wall. This feature, which became known as Feature 8, was found to extend underneath and beyond the fort wall.

It appears that the original foundation trench was excavated with the intention of making the fort regular in shape. This plan was abandoned. The already laid footing and trench were covered and filled and a new trench excavated. At this time there seems to be no apparent environmental factor that would give an irregular fort an advantage over a regularly constructed one. The distance between the tip of the Powder Magazine Bastion and the Commandant's Bastion is approximately 155 meters. This suggests that the third Fort de Chartres was constructed as an irregular 80 toise fort (see Table 5.1)- the smallest of the forts described by Muller.

IMPLICATIONS OF THE STRUCTURAL REMAINS

The structural evidence uncovered at Fort de Chartres presents a paradox. First, this third fort, unlike its two predecessors and Forts Michilimackinac and Ouiatenon, is constructed of stone and built upon military engineering principles common in the eighteenth century. The construction of the third Fort de Chartres required skilled craftsmen, technical experts, and labor. Such an ensemble required a community of individuals for support, i.e, people producing food, shelter, etc. All this was available in the villages that surrounded Fort de Chartres.

In spite of the appearance of military strength, the third Fort de Chartres could not withstand cannon fire. The fort walls would have crumbled under cannon attack. The ditch was too small to function as an impediment to attack. The series of loop holes would have been low enough to allow easy access. Why all the effort and expense to construct such a fort?

One possible explanation is that Fort de Chartres was at the edge of the eighteenth century world. The only avenue for bringing cannons near Fort de Chartres would have been up the Mississippi River. Any

such attempt would have been detected weeks before the cannon would actually arrive near enough the fort for a successful attack. If, through some sleight of hand, the offensive army did get cannon near the fort, much of the surrounding area would have been deforested increasing the vulnerability of offensive forces. Moreover, much of the surrounding area was wetland making movement of troops and cannon difficult if not impossible. In essence, Fort de Chartres would never be vulnerable to cannon attack. Consequently, structural strength was unnecessary.

The question still remains - why at the beginning of a war on two continents would the French government invest so much capital and labor into a fort that was located literally at the end of the known world? The explanation proposed here is that the fort was not simply a military outpost but the center of government and trade - an *entrepot* - established for the greater economic agenda of the colonial government. A temporary outpost would be constructed of perishable materials. A government center would be constructed of more permanent materials.

A considerable amount of labor, both skilled and unskilled, was required to build Fort de Chartres. Building the fort required planning, engineering knowledge, capital, and skilled craftsmen. In essence, it required an active community and active government presence. These elements were available in the Illinois Country by the 1750s. In fact building the stone fort was a response to a social and economic need to establish a permanent seat of government in the Illinois Country.

CHAPTER SIX

THE ARCHAEOLOGICAL RECORD: THE ARTIFACT ASSEMBLAGE

This chapter will focus on the artifacts recovered at Fort de Chartres over the last two decades of excavation. It will describe the system of classification selected to organize the material remains and the rationale used in selecting this system over others currently used in historic archaeology. Each class of artifacts will be described and select examples from Fort de Chartres presented. In addition, artifact frequencies by class will be presented not only for Fort de Chartres but also for Forts Ouiatenon and Michilimackinac. It should be noted that this study focuses only on the French colonial activity at these sites. Consequently, only artifacts from the French occupation at these sites will be presented.

Differences in frequencies of various artifact categories between the three forts will be pointed out throughout this chapter. These differences in artifact frequencies by category and class will be analyzed in detail. This detailed analysis will provide the basis for inferring

different site functions in the French colonial empire.

SYSTEMS OF CLASSIFICATION

This analysis employs the classification system developed by Lyle Stone in his work at Fort Michilimackinac (Stone 1974). It is not the only system currently used on colonial sites in North America. Consequently, it is necessary to describe the competing system and the rationale used in selecting Stone's system for analysis of material from Fort de Chartres.

One classification system currently used by a number of archaeologists investigating colonial sites in North America is that devised by Stanley South (1977a). In this system, artifacts are arranged in a three-tiered ascending hierarchy. The most basic level in the hierarchy is the type. Each artifact is classified into a type based upon its formal characteristics or physical attributes. For example, one artifact may be typed as Edge Decorated Pearlware and another as Blue Painted Pearlware.

Types are then grouped into classes - also defined by formal characteristics. Consequently, both the Edge Decorated Pearlware

and the Blue Painted Pearlware would be placed in the Ceramic Class. Classes of artifacts are then organized into groups. Groups are based on functional activities rather than on formal characteristics. Ceramics would then be placed into the Kitchen Group. In this classification system there is a total of nine artifact groups, 42 artifact classes, and an ever expandable number of artifact types. Table 6.1 illustrates the organization of this classification system (South 1977a:95).

South (1977a, 1978) used this classification system in his 'pattern recognition' studies on colonial sites in the Carolinas. By comparing artifact frequencies in each group between sites he was able to define three artifact distribution patterns on British colonial sites: the Brunswick Pattern of Refuse Disposal; the Carolina Artifact Pattern; and the Frontier Pattern.

South's classification system has proved useful in other colonial site studies as well - particularly on eighteenth-century Spanish colonial sites in Florida. Deagan (1983:99), in excavations at Spanish St. Augustine, utilized this system to distinguish between sites occupied by various

TABLE 6.1

SOUTH'S CLASSIFICATION SCHEME (South 1977a:95)

GROUP	CLASS	
Kitchen Group	Ceramics	Wine Bottles
	Case Bottles	Tumblers
	Pharmaceutical Bottles	Glassware
	Tableware	Kitchenware
Bone Group		
Architectural Group	Window Glass	
	Nails	
	Spikes	
	Construction Hardware	
	Door Lock Parts	
Furniture Group		
Arms Group	Musket Balls, Shots, Sprue	
	Gun Flints	
	Gun Parts	
Clothing Group	Buckles	Thimbles
	Buttons	Scissors
	Straight Pins	Hook and Eye
	Glass Beads	Fasteners
	Bale Seals	
Personal Group	Coins	
	Keys	
	Personal Items	
Tobacco Pipe Group	Tobacco Pipes	
Activities Group	Construction Tools	Farm Tools
	Toys	Fishing Gear
	Stub-Stemmed Pipes	Ethnobotanicals
	Colono-Indian Pottery	Military Objects
	Storage Items	
	Stable and Barn	
	Miscellaneous Hardware	

ethnic groups.

Deagan organized artifacts recovered from a series of sites into the groups - class - type classification system. By examining the variation in artifact frequencies between these sites she was able to recognize five patterns. Further analysis permitted her to distinguish between sites occupied by *peninsulares*, people born in Spain living in the New World; *criollos*, people of Spanish decent born in the New World; *mestizo*, people of mixed Indian and Spanish descent; American Indians; and freed Blacks.

The pattern recognition method proved essential in defining regularities and anomalies within and between the artifact assemblages in both the British colonial sites in the Southeast and the Spanish colonial sites in Florida. There is, however, no attempt in South's work to move beyond the description of a pattern in the British colonial site studies (Martin 1985:14). Deagan, on the other hand, suggests in her St. Augustine study that pattern recognition is only the first step in the analysis. After a pattern or series of patterns is discovered, the second

step is explaining the pattern.

The other classification system commonly used on colonial sites in North America, and the one to be used in this analysis, was devised during the late 1960s and early 1970s at Michigan State University (MSU) by a number of graduate students working on excavations and collections at Fort Michilimackinac (Brown 1971; Miller and Stone 1970). In 1974, Lyle Stone published his dissertation research that outlined in detail this classification system and applied it to the entire artifact assemblage recovered from Fort Michilimackinac.

Though developed independently, the MSU system integrates both formal and functional variables similar to South's. Formal characteristics of artifacts are described in a ranked system with four tiers - Class, Series, Type, and Variety. Classes are grouped into functional categories on two levels. For example, in terms of form a certain button will belong to Button Class I because it contains a Crown and Back Single Element with Eye Element Separate, Series A because the elements are cast together, Type 1 because it is made of pewter,

and variety A since it contains a flat crown with sharp beveled edge with the eye mounted on the neck and mold seam across the back and eye. In terms of function, all Button Classes belong to the Category of Clothing. This category along with the categories of Adornment, Grooming, Writing, and Activities are grouped into the functional context of utilization referred to as Personal.

Table 6.2 lists the seventeen categories into which various classes of artifacts are placed and the four behavioral Contexts within which the categories are grouped. There are a number of basic features that recommend this system. First, it is adaptable, i.e., new classes can be added without altering the fundamental structure of the system. Second, artifacts that are only fragments of a much larger object can be included at some level in the formal classification system, i.e., even a button fragment can be classified into a class even though features that would allow it to be identified in terms of series, type, and variety are missing. Third, classes can be moved into new categories or contexts as we learn more about social behavior in colonial situations. Fourth, the system acts as a key. The size of the assemblage at Fort Michilimackinac

TABLE 6.2
Artifact Classification System
Developed by Michigan State
University for French Colonial Sites

CONTEXT OF BEHAVIOR	CATEGORY
Craft/Activity	Subsistence Arms Commercial Special Skills and Crafts Measuring Transportation
Household	Maintenance and Repair Food Preparation and Consumption Furnishings Storage
Structural	Hardware
Personal	Activities Writing Grooming Clothing Adornment

is rivaled only by that at the Fortress of Louisbourg. Material recovered at other sites regardless of size can quickly be identified and classified. Finally, the system is set up to facilitate comparative studies. As new assemblages are classified, they can be easily compared to existing assemblages by setting up frequency tables.

This final point is crucial. Sprague (1981:254) points out that the main liability in South's classification system is that it is difficult to use for comparative purposes - classes are too general and types are too specific. This problem is overcome by the MSU system. Illustrative of this is Judy Tordoff's study of the French fur trade hierarchy. Because the MSU system is expandable and designed for comparative and statistical studies, Tordoff (1983) was able to compare assemblages not only from colonial French sites but also from historic Native American sites involved in the fur trade (see discussion and chart in the next chapter). Using the same seventeen categories, she defined more than 200 classes of artifacts. Generating frequencies of artifacts by class for each site, she conducted a statistical comparison between sites in order to test her fur trade hierarchy model.

In this study, where the differences between Forts de Chartres, Michilimackinac and Ouiatenon is under examination, the MSU classification system has been adopted. Any classification system is an analytical tool designed to test a hypothesis, solve a problem, or order material. The initial goal of this study is to define the variability between the artifact assemblages at Fort Michilimackinac, Ouiatenon, and de Chartres. In order to accomplish this task an appropriate classification system is necessary. The MSU system is superior to South's system for this study because of its flexibility to accommodate new artifact classes and because of its utility in comparative research. Moreover, it has become the standard classification system on French colonial sites in North America. The assemblage from Fort de Chartres will appear here for the first time. Consequently, it is important to present it in a well-established system for future use by other scholars.

It should be noted that the veracity of the type concept in historical archaeology is not the source of debate and interpretation that are found in prehistoric studies (Martin 1985:8). Since many artifacts on historic sites are the result of standardized industrial processes,

attribute variability is almost nonexistent in comparison to artifacts produced in a folk system on prehistoric sites.

DATA SOURCES AND SAMPLE BIAS

As mentioned above, artifact assemblages from three archaeological sites - the ruins of Forts de Chartres (the third Fort de Chartres), Michilimackinac, and Ouatennon - will be the subject of this analysis. The reason for choosing these three sites is as follows: First, and most importantly, these three sites have been the subjects of numerous archaeological investigations over the past few decades. Consequently, we have substantial artifact assemblages from each. Second, these three forts commonly are grouped together in discussions of French colonial archaeology in the Upper Midwest. This etic approach to grouping the sites reflects current rather than eighteenth-century geo-political biases. Nonetheless, it is part of the common misunderstanding of the eighteenth-century colonial economy. Finally, and most obviously, these three sites are "forts." They were part of the planned colonization process the French were effecting on the frontier.

The data used in this analysis are derived from a number of

sources. Artifact frequencies for the French occupation at Fort Michilimackinac have been generated by Tordoff (1983) using the artifacts presented in Stone's 1974 volume on Fort Michilimackinac. Artifact frequencies from Fort Ouiatenon were derived from two sources. In her initial study, Tordoff (1983) presented artifact frequencies from her excavations in the 1970s. In this study these are combined with frequencies generated from artifact descriptions presented by Noble (1984), resulting from his excavations at Ouiatenon in the late 1970s and early 1980s.

Artifact frequencies for Fort de Chartres were generated by this author from excavations conducted during the 1970s and 1980s. More than 3000 artifacts were recovered. Of these only a little more than 2000 were considered suitable for this analysis. After initial washing and cataloging, each artifact was classified using the key system developed by Stone. Only artifacts that could positively be identified as eighteenth-century French in origin were selected for this analysis. Many undiagnostic fragments and all diagnostic British material were excluded.

The history of archaeological investigations at Fort de Chartres was outlined in Chapter Four. The reader will remember that archaeological excavations were conducted in order to provide information on the engineering and architecture of the fort. Archaeological excavations were the initial step in the process of reconstructing the fort. Consequently, data generated from these excavations were not the result of a random sampling strategy.

The history of archaeological excavations at Forts Michilimackinac and Ouiatenon read much like that of Fort de Chartres. Excavations at Fort Michilimackinac were first conducted in the 1930s to provide information about the location of the stockade. This type of excavation strategy continued well into the 1960s (Stone 1974:12). Tordoff (1983:146) explains that the stated purpose of excavations at Fort Ouiatenon was to locate sections of the stockade walls and some of the internal structures. In order to accomplish this she had field crews excavate trenches by hand perpendicular to where the remains of stockade trenches were thought to occur.

One might argue that the same bias exists in all three assemblages since the sampling strategy at all three sites appears to have been similar. Therefore, any significant statistical difference between the assemblages is real. This, however, begs the question. The issue of sample bias is more complicated. For the purpose of this discussion we need to examine the samples as a part of each site as a whole. Then we need to examine what is known about the samples in relationship to known internal features; e.g., powder magazine, barracks structures and the like.

Different approaches appear to have been used in determining the overall size of each site. Stone excavated 375 ten-foot squares at Fort Michilimackinac, constituting an estimated 40% of the area within the stockade (Stone 1974:15). Based upon these figures the total area of the site is approximately 2 acres.

Good historic documentation assisted archaeologists in defining interior structures. In turn many of these structures were excavated prior to reconstruction. Though material was collected systematically and

can be correlated with known historic structures within the fort, the data presented by Stone and others was not organized by structure or feature within the fort. In addition only structures on one side of Fort Michilimackinac had been excavated. In his 1974 work Stone accomplished an important task. He presented a catalogue of eighteenth-century French Colonial material culture. Using the data generated by Stone would require examination and analysis of the collection as a whole. His work does not break the collection down into smaller analytical units correlated to internal site features or structures.

Under Tordoff's direction the sampling procedure at Fort Ouiatenon focused on finding the fort walls (Tordoff 1983:148). There was no attempt during her tenure to define the internal arrangement of structures or activity areas within the stockade. Noble's dissertation attempted to use quantitative methods to discover activity areas at the fort site. He established a grid and excavated units in a checkerboard fashion throughout a portion of the site. His results were inconclusive (1983:90).

Historic documents are silent on the location and number of features or structures located within the fort. Since Noble was unable to determine activity areas or the location of structures within the fort, artifacts recovered are not correlated with internal structures or features. As with Fort Michilimackinac, it is not possible to break the Fort Ouiatenon collection down into smaller analytic units based on internal structures or features.

Both Tordoff and Noble define the site as the area within the stockade. Based on their maps and discussion, the site is approximately 200 by 300 feet in size or approximately 1.3 acres. The total area excavated appears to be less than 10%.

Excavations at Fort de Chartres did focus on reconstruction throughout the 1970s and 80s. There were a number of attempts to assess the archaeological deposits within known structures. Under Margaret Brown's direction excavations were conducted inside the powder magazine and the east and west barracks. No artifacts were recovered from the powder magazine and very few from inside both

barrack structures. Most artifacts were recovered outside of structural ruins. For example considerable material was recovered during the excavation of the “drains” at the fort.

Unlike Fort Ouiatenon, historic documents do provide information on the interior structures. There were nine structures within the fort: the store house, the guard house, the government house, the Intendant’s house, 2 barracks, a powder magazine, a bake house, and a prison. The store house, guard house, government house and Intendant’s house all have deep cellars that appear to have been cleaned out decades prior to systematic excavations. Testing in these cellars failed to reveal any intact archaeological deposits. The two barracks buildings along with the powder magazine did not contain cellars and were the subject of intensive excavation in the 1970s. Excavations were also conducted in the bake house area during the 1970s. Remains of the prison appear to have been washed away by floods along with the curtain wall and bastions on the side of the Fort that faces the Mississippi River.

It would be an interesting exercise to compare artifacts from

comparable elements at each fort, e.g., barracks to barracks, bake house to bake house, etc. Since there is no comparable information from Fort Ouiatenon, it would have to be left out of the analysis. Making one to one comparisons between Fort de Chartres and Fort Michilimackinac would prove problematic for two reasons. First, as mentioned above, published material does not correlated structures with artifacts at Fort Michilimackinac. But even if it did, there would be another major problem. Most of the structures at Fort Michilimackinac were residential structures, i.e., they were occupied by a male head of household along with his immediate and in some cases extended family. These "houses" were built next to each other along "streets." There was a powder magazine at both forts. But Fort Michilimackinac lacked barracks buildings, and Fort de Chartres did not enclose a "settlement" of single-family dwellings. Since the structures at Michilimackinac have few analogous structures at Fort de Chartres (and visa versa), drawing one to one comparisons between features or structures within these two forts would be impossible. The sample would be extremely small and the vast majority of the structures would be excluded from the analysis. Later chapters in this analysis will discuss

these differences further.

Defining the site size at Fort de Chartres differs from the other two forts. Archaeologists at Fort de Chartres knew early on that the site was larger than the area enclosed by the walls. Exterior fortification elements like the ditch could yield both structural information as well as artifact deposits. The total area inside the fort walls is less than 5 acres. This area almost doubles, however, when exterior elements are included.

In attempting to determine what percentage of the fort has been excavated gets even more complicated. Testing in the 1970s determined that the parade ground, which measures a little less than 2 acres in size, contains no intact archaeological deposits. It is unclear if this is due to the fact that the area may have been scraped in the nineteenth or early twentieth century or whether very little activity that would leave archaeological deposits took place in this area. Most of the excavations providing information for analysis in this dissertation

occur along the north curtain wall where the vast majority of intact archaeological deposits appear to be concentrated.

From this discussion it is clear that there is not objective basis to assess the issue of sample bias. Samples were not collected randomly. Artifacts recovered were not systematically correlated to internal features thereby allowing for the comparison of similar elements. However, the samples recovered from each of these sites are substantial. At Fort Michilimackinac excavation units representing approximately 37,000 square feet were excavated; at Fort Ouiatenon over 5,000 square feet; and at Fort de Chartres over 12,000 square feet.

In spite of the shortcomings in the samples from each site, this analysis will proceed "as if" the samples are representative of the occupation and activities at each site. This will enable us to use the "available" data to make inferences rather than to dismiss the data as useless. It would be foolish to assume that conclusions reached in this study are the "final word" on the relationships among these three sites. In the scientific process it is important to begin the discussion

somewhere. Here, we begin with the assumption that each of the collections is reasonably representative and unbiased. Even if this assumption should later be demonstrated to be false, this study will help focus future archaeological activity.

It is important to stress one additional point. Any differences between the artifacts assemblages in this analysis should be viewed as only one piece of evidence. Structural evidence already discussed and settlement pattern information to be presented later are of equal importance to this discussion. Any inadequacies encountered in examining the artifact data will be compensated for in examining other evidence.

ARTIFACT ASSEMBLAGES

The remainder of this chapter is divided into four main sections corresponding to the four behavioral contexts outlined in the MSU classification system. These four contexts are (1) Craft/Activity, (2) Household, (3) Structural, and (4) Personal. The contents of each context will be described and examples of diagnostic artifacts from

each class provided. In addition tables will be provided listing artifact class frequencies for each of the sites considered in this analysis.

According to Stone, the "context of utilization refers to the setting or place in which a particular artifact category would have been most commonly used" (Stone 1974: 22). This functional aspect of the classification system organizes artifact classes (formal categories) into use-related contexts. Since the purpose of this dissertation is to define the differential function of a select group of French colonial sites, i.e., Forts de Chartres, Michilimackinac, and Ouiatenon, artifacts recovered at these forts will be presented within their respective contexts of utilization.

CONTEXT OF BEHAVIOR: CRAFT/ACTIVITY

The Craft/Activity context of utilization or behavior (Table 6.3) refers to those artifact classes that were used in subsistence activities, military activities (Arms), economic and commercial activities, preindustrial manufacturing and repair activities (Special Skills and Crafts), measuring activities, and transportation-related activities. According to Table 6.3, 413 of the total 2,104, or 19.6%, of the

TABLE 6.3
Frequency of Artifacts by Class and Category
within the Craft/Activity Context of Behavior

	Fort de Chartres	Fort Ouatennon	Fort Michilimackinac
CATEGORY: SUBSISTENCE			
FISH HOOKS	1	18	219
HARPOONS	0	1	10
HOES	0	6	0
POWDER HORNS	0	1	0
SCYTHES	3	1	4
TRAPS	1	0	3
TOTAL	5	27	236
	1.21%	0.16%	1.68%
	(PERCENT OF CONTEXT TOTAL)		
CATEGORY: ARMS			
BAYONETS	1	0	4
BAYONET SCABBARD	0	0	9
CANNON BALLS	7	0	0
FLINT PATCHES	0	0	2
GRAPE SHOT	166	0	0
GRENADES	0	0	22
GUN PARTS	15	597	1218
GUNFLINTS	53	847	2536
METAL PROJECTILE POINTS	0	7	48
MORTAR FRAGMENTS	42	0	0
MUSKET BALLS	6	544	753
SCABBARD CLIPS	5	2	6
SHOT	45	1232	488
SLING SWIVELS	0	0	3
SWORD BLADES	0	2	5
SWORD POMMELS	0	0	3
TOTAL	340	3231	5097
	82.32%	19.04%	36.18%

TABLE 6.3 continued

	Fort de Chartres	Fort Ouatennon	Fort Michilimackinac
CATEGORY: COMMERCIAL			
AWLS	3	59	327
BRACELETS	1	0	7
BROOCHES	0	24	39
COINS	0	12	28
EAR BOBS	0	11	5
FIRESTEELS	0	12	40
GLASS SETS	0	3	0
HAWK BELLS	0	50	117
KETTLE PARTS	2	68	18
KNIVES	19	325	512
LEAD SEALS	0	64	198
METAL BEADS	0	26	0
MIRRORS	0	20	47
NECKLACE BEADS	10	68	2019
RINGS	0	92	121
RIVETS	5	81	310
SEED BEADS	1	12649	4711
TRADE AXES	0	17	23
WAMPUM	0	35	87
Y BEADS	0	10	0
TOTAL	41	13626	8609
	9.93%	80.31%	61.12%
CATEGORY: SPECIAL SKILLS AND CRAFTS			
ADZES	0	1	0
ANVIL HARDWARE	0	1	0
CHISELS	3	7	15
DRILL BITS	1	1	10
FILES	2	20	37
GIMLETS	0	3	4

TABLE 6.3 continued

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
GOUGES	3	2	7
HAMMERS	0	2	5
ICE CHOPPERS	0	0	1
NETTING NEEDLES	0	1	7
PLANES	0	1	2
PUNCHES	0	8	9
SAW BLADES	1	3	12
SPUDS	0	10	0
VICES	0	0	1
WEDGES	0	8	6
WOODWORKING TOOLS	0	1	0
TOTAL	10	69	116
	2.42%	0.41%	0.82%
CATEGORY: MEASURING			
COMPASSES	0	0	5
DIVIDERS	0	1	3
TELESCOPES	0	0	1
WEIGHTS	0	0	9
TOTAL	0	1	18
	0.00%	0.01%	0.13%
CATEGORY: TRANSPORTATION			
BRIDLE PARTS	0	3	0
HARNESS BUCKLES	17	8	10
WAGON PARTS	0	1	0
TOTAL	17	12	10
	4.12%	0.07%	0.07%
CONTEXT TOTAL	413	16966	14086

diagnostic eighteenth-century French artifacts recovered at Fort de Chartres, have been placed in this context of behavior. It is the second largest context of behavior at Fort de Chartres and the largest at both Forts Michilimackinac and Ouiatenon. In order to understand how Forts de Chartres, Michilimackinac, and Ouiatenon may have functioned differently in the eighteenth-century French colonial economic system we need to explore some of the subtle and not so subtle differences among artifacts of this context from these sites.

Category: Subsistence

This artifact category contains six classes of artifacts: Fish hooks, hoes, harpoons, scythes, traps, and powder horns and powder measures. Artifacts from these classes were used in the acquisition of subsistence resources. In Table 6.3 the frequency of artifacts in each class is provided as well as the relative frequency of this category within the Craft/Activity context of behavior. Artifacts utilized in subsistence activities comprise a small portion of the total artifact assemblage at all three sites. At Fort de Chartres only three of the six artifact classes are represented: one fish hook, three scythe fragments, and one fragment of an iron trap spring (Figure 6.1).



Figure 6.1. Context of Behavior - Craft/Activity

Category: *Subsistence*

(A) Sickel (B) Scythe (C) Fish hook

Category: Arms

In setting up the classification system for artifacts recovered at Fort Michilimackinac Stone (1974) did not have a separate category for arms. Instead, he placed artifact classes like gunflints and metal projectile points in the subsistence category. When she refined this classification system, Tordoff (1983:66) pulled these classes together to form the Arms Category and placed it within the Craft/Activity Context of Behavior. For the analysis of material from Fort de Chartres, three new classes were added to this category: Grape Shot, Mortar Fragments, and Cannon Balls.

As can be seen in Table 6.3, the Arms Category comprises sixteen distinct artifact classes. Artifacts recovered at Fort de Chartres can be found in only nine of the sixteen classes. This category, however, contains 82.3% of all the artifacts in the Craft/Activity Context of Behavior for Fort de Chartres - a much greater proportion than at Forts Michilimackinac and Ouiatenon.

Gunflints (Figure 6.2) comprise the second largest class of artifacts in this category and are well represented at both Forts Michilimackinac and Ouatonenon. As pointed out by Noble (1983:196):

The gunflint is the key component in the flintlock ignition system. Clamped into the jaw of the cock, the flint was thrown forward to strike the frizzen when the trigger was pulled. This action produced a spark that ignited black powder stored in the pan and, thence, in the gun breech.

In his initial classification of gunflints, Stone (1974:247) divides gunflints into three series: blade gunflints, blade-spall gunflints, and spall gunflints. Modified by Tordoff (1983:311-319) and utilized by Noble (1983:196), only blade gunflints (those struck from a prepared core) and spall gunflints (those exhibiting a bulb of percussion on the superior surface) are recognized. Blade-spall gunflints are placed into the spall gunflint series.

In the Fort de Chartres assemblage only five of the fifty-three gunflints belonged to the blade gunflint series. The rest were of the spall gunflint series. It should be noted that one blade-gunflint in the assemblage was of British manufacture. It is not, however, included in



Figure 6.2 Context of Behavior - Craft/Activity
Category: Arms
Gun flints

the frequency totals in Table 6.3. For a more detailed discussion of the difference between French and British gunflints see Stone (1974), Hamilton and Emery (1989), and Witthoft (1966).

The **Gun Parts** (Figure 6.3) class contains a substantial number of artifact series, types, and varieties when applied to the Fort Michilimackinac and Fort Ouiatenon assemblages. As can be seen in Table 6.3 artifacts classified as gun parts are well represented. Noble (1983:206) comments that gun parts are "ubiquitous items on these sites." This is not the case with the Fort de Chartres assemblage.

The gun part class contains items, usually made of metal, that were part of the gun mechanism on flintlock guns and military muskets. The assemblages from Michilimackinac and Ouiatenon contain not only a substantial number of artifacts from this class, but also artifacts in excellent condition (Hamilton 1976). By contrast, the gunpart artifacts from Fort de Chartres are few in number, of poor quality, and fragmentary in nature.

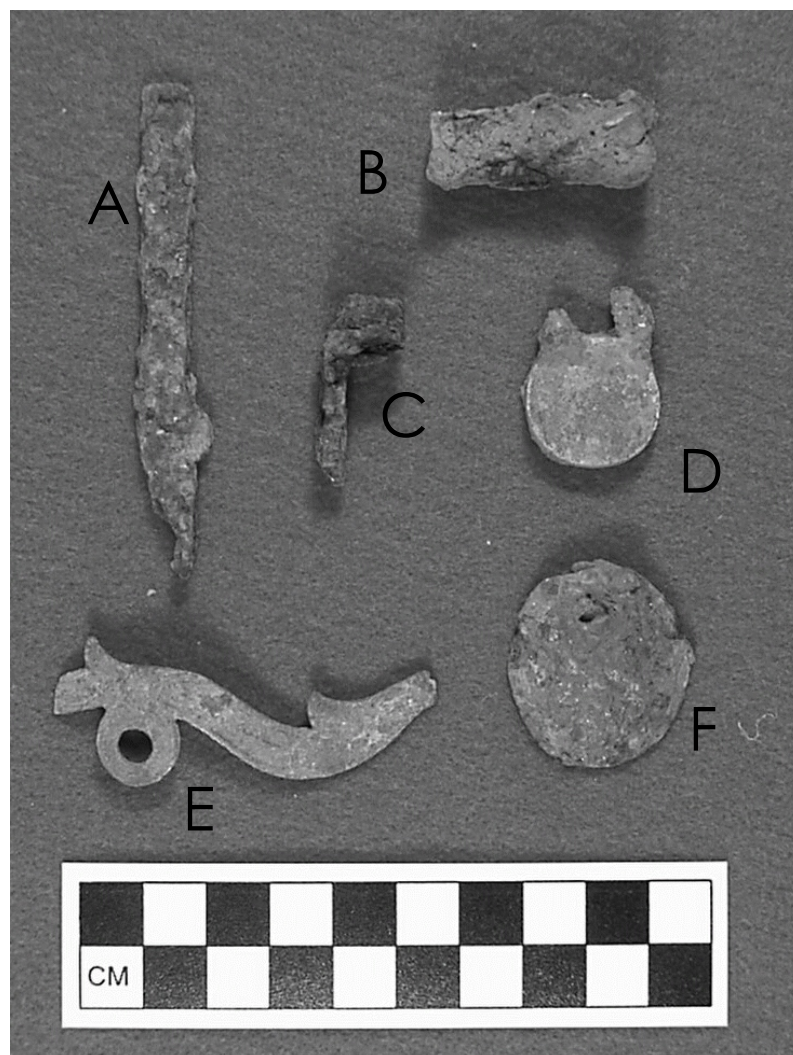


Figure 6.3 Context of Behavior - Craft/Activity

Category: Arms

Gun Parts (A) Flintlock Mainspring, (B) Iron Ramrod Fragment, (C) Flintlock Bridle, (D) Trigger Guard Fragment, (E) Brass Serpent Side Blade Fragment, (F) Flintlock Vise Jaw Clamp

Scabbard Clips are metal hooklike items used to attach the scabbard, a leather sheath that covered a bayonet or sword, to a soldier's waist belt (Grimm 1970:127; Noble 1983:295). Few of these artifacts were recovered from the three sites. It should be noted that clips found at Fort de Chartres and Fort Michilimackinac were made of both brass and iron (five brass, one iron at Fort Michilimackinac, and three brass and two iron at Fort de Chartres). All the clips recovered from Fort Ouiatenon, however, were made of iron (Noble 1983:295).

Only forty-five **Lead Shot** or balls were recovered from Fort de Chartres - a relatively small amount compared to the other two fort sites. These artifacts, however, present some problems when attempting to classify them into functional categories.

Lead balls and shot are generally found in good number on sites of the Historic Period. In cases where sprue and other waste products are also present, it is clear that casting activities were carried out on-site. It is advisable, however, not to identify balls and shot narrowly as musket projectiles. Although they undoubtedly were used most often in that manner, many alternative functional contexts may be inferred. Among these are uses as

diverse as fishing sinkers, curtain weights, and gaming pieces. In addition, as evidenced by certain specimens bearing cusp marks on their surfaces, lead balls occasionally were used in association with the pain of medical treatment or corporal punishment. Most importantly, lead balls are known to have been staples of the fur trade (Noble 1983:267).

In spite of Noble's reservations outlined above, all lead shot was placed in the arms category for a number of reasons. First, no attempt has been made in other reports with sizable lead shot artifacts to distinguish the various possible uses. Second, the Fort de Chartres sample is too small for such an undertaking. Third, the frequency of lead shot at each site is relatively small compared to the total frequency of artifacts at each site. Distributing the lead shot into other use categories would not significantly affect the relative frequency of artifacts in each category.

The final three artifact classes under consideration in the Arms Category are only found at Fort de Chartres and are not found at either Fort Ouiatenon or Michilimackinac. In fact, artifacts in the **Grape Shot**, **Mortar Fragment**, and **Cannon Ball** classes contain 63% of the total

artifacts in the Arms Category at Fort de Chartres. Consequently, these classes warrant some discussion.

When the French surrendered Fort de Chartres to the British on October 10, 1765, two documents were prepared. One document, in French, described the fort in some detail along with various items relinquished by the French. The second document, concurrently written in English, but not a translation of the French version, was also prepared. This second document was sent by Capt. Sterling to General Gage (Sterling 1765).

Both of these documents, referred to as the *Proce Verbal* or "Verbal Process of Surrender," indicate that seven cannon and 619 balls were surrendered to the British (Carter 1908: 201-221). It should be noted that this inventory represents items surrendered to the British and left in their custody after the French vacated the fort. It does not suggest that these were the total number of cannon at the fort throughout the French occupation.

Seven **cannon balls** (Figure 6.4) have been recovered during archaeological excavations at Fort de Chartres, but no cannon or cannon parts have ever been found. It should be noted, however, that there are local rumors and legends concerning cannon and balls recovered and removed from the fort by local inhabitants - particularly in the periods prior to state ownership.

For a fort the size of de Chartres, seven cannon balls seem too few. Perhaps its great distance from a sea port and the expense of transporting such ordnance up the Mississippi River may account for the small number of cannon balls at Fort de Chartres. The relative abundance, on the other hand, of **mortar fragments** (see Table 6.3) suggests the presence of another more transportable antipersonnel weapon at the fort - the mortar.

The mortar, though much smaller than a cannon, worked on similar principles. A cannon firing a single projectile - a cannon ball - was most effective when used as an offensive weapon against structures like a fort.



Figure 6.4 Context of Behavior - Craft/Activity

Category: Arms

Cannon Balls

The high velocity impact of the iron ball would begin to pierce and undermine the fortification. A mortar on the other hand was particularly useful as a defensive weapon. It could fire an explosive charge (a mortar shell) or a bag filled with rocks at a low velocity at advancing troops spraying them with hot metal or rock fragments. At a small defensive structure on the edge of the French Empire, the mortar may have been the ordnance of choice.

Grape shot (Figure 6.5) or canister shot (Grimm 1970:76) is also a significant artifact class in the Arms Category (see Table 6.3). Grape shot are small cast iron balls of various sizes that were placed in tin canisters and fired from cannons producing an effect similar to a mortar. This essentially changed the cannon from an offensive into a defensive weapon. The wilderness location of Fort de Chartres suggests that cannon used with grape shoot would be far more important than cannon with balls. With no other fortress-like structures within a thousand miles, cannon balls were probably useless artillery.

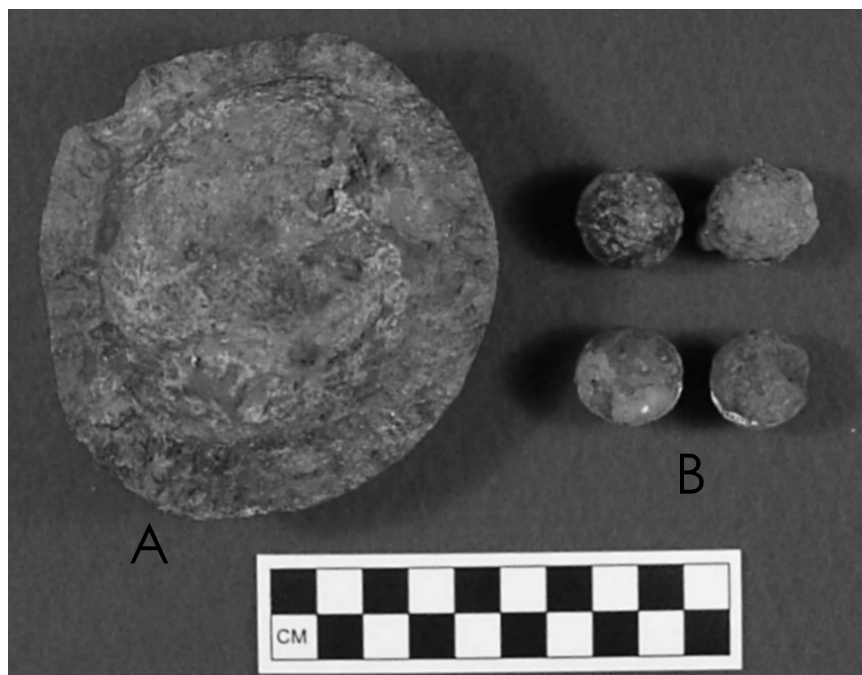


Figure 6.5 Context of Behavior - Craft/Activity
Category: Arms
(A) Mortar Fragment, (B) Grape Shot

As mentioned initially, the last three artifact classes, cannon balls, grape shot, and mortar fragments, had to be added to the Arms Category for this study. No material of this type was ever recovered from Forts Michilimackinac or Ouatonenon. In addition, there is no documentary evidence to suggest that either of these forts were equipped with cannon and mortar.

This information coupled with the fact that over 63% of the artifacts in the Arms Category belong to these three classes suggests that the role weapons and arms played at Fort de Chartres differed radically from those at the other two forts. In addition it may also suggest that the role of Fort de Chartres in the French colonial empire differed from that played by Ouatonenon and Michilimackinac.

Category: Commercial/Trade

The Commercial/Trade Category is composed of artifact classes "made up of goods known from supply lists and written descriptions to have been frequently used in the Indian trade" (Tordoff 1983:66). As can

be seen in Table 6.3, this category is the largest in the Craft/Activity Context of Behavior for both Fort Michilimackinac and Ouaténon. And as will be seen in the next chapter, this category is the largest of all categories in all contexts of behavior for both of these sites.

In the Fort de Chartres assemblage, the Commercial/Trade Category is the second largest in the Craft/Activity Context of Behavior. However, as can be seen in Table 6.3, this category contains less than 10% of the artifacts from that context of behavior. As will be demonstrated in the next chapter, this category contains less than 2% of all the artifacts at Fort de Chartres.

Noble (1983: 92) points out that **awls** are found on most historic sites, but in particular on sites associated with fur trade activity. This may be attributed to two factors: first, awls were used as trade items, and second, they were used by European populations in processing and tailoring pelts. Only three iron awls have been recovered during the Fort de Chartres excavations, whereas 59 were recovered from Fort Ouaténon and 327 from Michilimackinac.

The discrepancy in the awl absolute frequency between these three sites suggests that the role Fort de Chartres played in the fur trade differed from that of the other two forts.

Of the many varieties of artifacts found on historic sites, the most ubiquitous are beads. They were an important item in the political and economic relationships between the Europeans and American Indians in the colonial period. In his first encounters in October 1492, Christopher Columbus presented strings of glass beads to the Indians (Quimby 1966:81). Subsequently beads were used in exchange for food, furs, and even friendship (Brain 1979:96)

Two classes of beads (Figure 6.6) have been recovered from Fort de Chartres: **necklace beads** and **seed beads**. Necklace beads were usually strung on a string and worn around the neck, whereas seed beads were usually sown into or on clothing (Noble 1983:95). Mainfort (1979:381) points out, however, that this was not always true. Necklace beads were often sown into material and seed beads worn around the neck. Necklace beads are generally larger than seed beads and



Figure 6.6 Context of Behavior - Craft/Activity
Category: Commercial
Beads

therefore easy to distinguish. In order to facilitate comparison between sites, the functional distinction between seed beads and necklace beads will be maintained.

As can be seen in Table 6.3, the discrepancy in frequencies of necklace and seed beads between the three sites is substantial. Where thousands of beads have been recovered from Forts Michilimackinac and Ouatonenon, only eleven have been recovered from Fort de Chartres. Although bead counts can be inaccurate - they are so small that they often fall through excavation screens unless a very fine mesh is used - the differences in bead frequencies between Fort de Chartres on the one hand and Forts Michilimackinac and Ouatonenon on the other seem too great to attribute only to sampling error. As will be discussed in the following chapters, such variation suggests functional differences between Fort de Chartres and the other two sites.

There are three types of kettles found on French colonial sites: cast-iron, brass, and copper. Cast-iron and brass kettles are considered household items and will be discussed in a later section. **Copper kettles,**

however, were trade items and are appropriately considered in this section.

As can be seen in Table 6.3, only two kettle parts were recovered from Fort de Chartres: one kettle lug made of iron and one brass kettle patch. In addition five **rivets** were also recovered. Noble suggests that these rivets were used in patching kettle walls or in repairing lug attachments. As with a number of previous artifact classes, kettle parts and rivets are more amply represented at Forts Michilimackinac and Ouiatenon.

Knives (Figure 6.7) can be divided into two basic categories: sheath or case knives and folding or clasp knives. Both types are represented in the Fort de Chartres assemblage. As can be seen in Table 6.3, a total of 19 knives and knife fragments has been recovered in excavations at the Fort as compared to 325 from Fort Ouiatenon and 512 from Fort Michilimackinac.

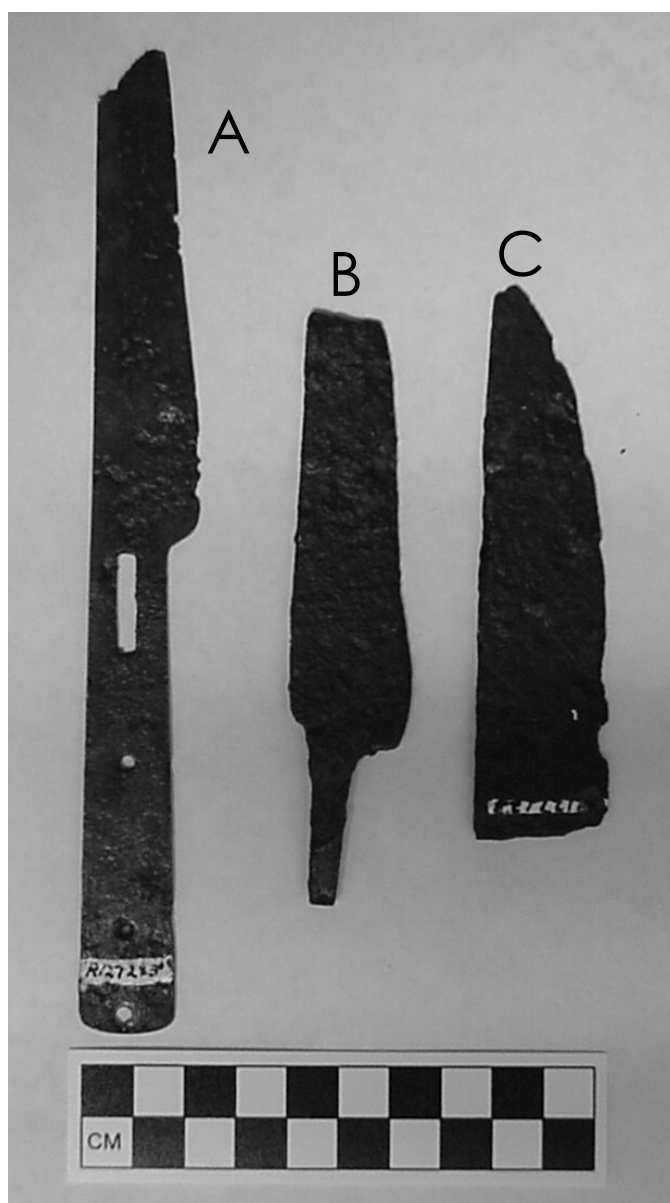


Figure 6.7 Context of Behavior -
Craft/Activity
Category: Commercial
(A) Case blade with straight back, (B) Rat
tail case blade fragment, (C) Iron case
blade tip.

The final item in the Commercial Category is a brass **bracelet** fragment. No bracelets were recovered at Fort Ouiatenon and only 7 at Fort Michilimackinac (Stone 1974:134-135).

As can be seen in Table 6.3, artifacts belonging to the Commercial Category are poorly represented at Fort de Chartres. Less than 10% of all artifacts in the Craft/Activity Context of Behavior fall into this category. This is not the case at either of the other forts. Over 80% of the artifacts in the Craft/Activity Context of Behavior fall into this category at Fort Ouiatenon and 61.12% at Fort Michilimackinac.

On close inspection of Table 6.3 the reader will notice that the differences between the artifacts in the Commercial category at Fort de Chartres on the one hand and Forts Michilimackinac and Ouiatenon on the other is more than simply a discrepancy in artifact frequencies. There are 21 classes of artifacts in this category. Artifacts from the Fort de Chartres assemblage can be classified into only 7 of these classes. Fort Michilimackinac and Ouiatenon have artifacts that can be placed into 18 and 20 of these classes respectively.

As mentioned in the beginning of this section, artifact classes included in the Commercial Category reflect trade lists found in documentary sources. These artifacts were once used by Europeans in exchange for furs in transactions with the Indians. The paucity of artifacts from this category at Fort de Chartres suggests that fur trade activity was either unimportant at Fort de Chartres or took place at some other site. Further discussion of this issue will be presented later.

Category: Special Skills and Crafts

The special skills and crafts category includes artifact classes that contain material used in activities such as building construction and repair, black smithing, and repair of tools used in subsistence activity, e.g., netting needles used to repair fish nets. As can be seen in Table 6.3, the relative and absolute frequencies for this category are small for all three sites. At Fort de Chartres only 10 artifacts from this category have been recovered.

Category: Transportation

Transportation is the final category in the Craft Activity Context of

Behavior. This category contains a total of three artifact classes, and as can be seen in Table 6.3, this category is not well represented at any of the three sites. At Fort de Chartres only one artifact class, **Harness Buckles**, is represented. These buckles (Figure 6.8) are part of the harness assembly used on draft animals.

As can be seen in Table 6.3, Fort de Chartres contains more harness buckles than either of the two other sites. Since draft animals were introduced into the Illinois Country by the Jesuits as early as 1712 (Belting 1948:56) and are well represented in inventories and other documentary sources from the period, it would not be unusual to find such artifacts at the fort.

CONTEXT OF BEHAVIOR: HOUSEHOLD

The Household Context of Behavior includes classes that contain artifacts used in the maintenance and repair of domestic goods, the preparation and consumption of food, the storage of goods, and artifacts used as domestic furnishings. Approximately 71% of the diagnostic eighteenth-century French artifacts recovered at Fort de Chartres (1496 of the total 2102) have been placed in this context of

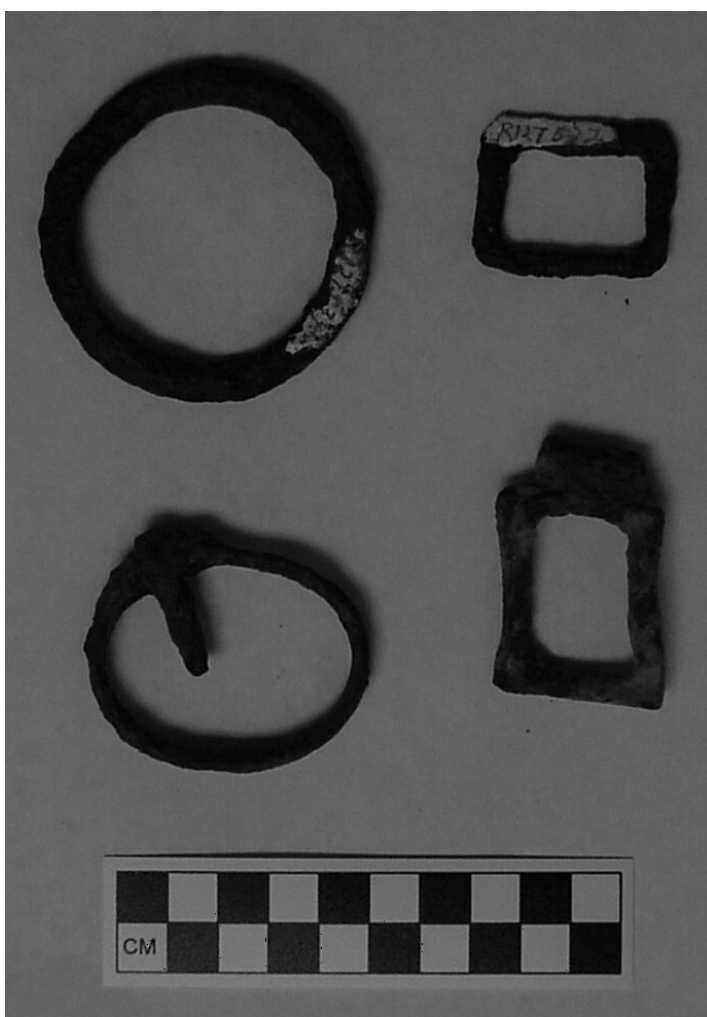


Figure 6.8 Context of Behavior - Craft/Activity
Category: Transportation
Harness Buckles

behavior. It is by far the largest context of behavior at Fort de Chartres and the third largest at both Forts Michilimackinac and Ouiatenon.

Examination of artifacts in the Household Context of Behavior illustrates some of the subtle differences between the classification system designed by Lyle Stone used here and the system developed for British artifacts by Stanley South (1977). As mentioned above, the artifacts placed in the Household Context of Behavior include those used in domestic activity. The analogous artifact group used by South is the "Kitchen Group," which includes artifact classes like ceramics and bottle glass. To the twentieth century reader, defining a portion of an artifact assemblage as belonging to a Kitchen Group would seem obvious. It should be noted, however, that kitchens in colonial period houses were often separate from the rest of the house, including the dining room. To classify all ceramics as Kitchen artifacts would be misrepresenting not only the location of the artifacts, but also the function. By using the more inclusive category of "Household," we avoid such assumptions.

Category: Maintenance and Repair

The Maintenance and Repair Category is composed of artifacts from four classes (straight pins, iron needles, thimbles, and scissors) generally used in the repair of domestic goods, i.e., clothing and other dry goods. As can be seen in Table 6.4, this category at Fort de Chartres contains few artifacts in comparison to Forts Michilimackinac and Ouiatenon. Only two of the four artifact classes for this category are represented at Fort de Chartres.

Only four **needles** and five **scissors** were recovered from Fort de Chartres. This is considerably less than at either of the other two forts as can be seen in Table 6.4.

Category: Food Preparation and Consumption

The largest category in the Household Context of Behavior for all three fort sites is Food Preparation and Consumption. Artifacts from fifteen classes assigned to this Context are found at the sites. This category contains 99.2% of all artifacts from the Household Context of Behavior at Fort de Chartres. Inspection of Table 6.4 will indicate to the

TABLE 6.4
Frequency of artifacts by class and category
within the Household Context of Behavior

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
CATEGORY: MAINTENANCE AND REPAIR			
IRON NEEDLES	4	89	49
SCISSORS	5	12	27
STRAIGHT PINS	0	801	781
THIMBLES	0	18	41
TOTAL	9	920	898
	0.60%	36.55%	11.69%
CATEGORY: FOOD PREPARATION AND CONSUMPTION			
BOTTLE GLASS	108	74	279
BRASS KETTLE	1	0	0
CAST IRON KETTLE	15	5	60
CERAMICS	1267	1339	5332
FORK/SPOON	6	18	95
METAL CUP	0	1	0
PAN HANDLE	1	2	6
PEWTER PLATE	0	0	1
PORRINGER	0	0	1
POT HOOK	2	5	5
SERVING SPOON/LADLE HANDLE	1	0	0
SIEVE	0	1	0
SPIGOT	0	3	22
SPIGOT KEY	0	3	4
TABLEWARE	83	100	333
TRIVET	0	0	1
TOTAL	1484	1551	6139
	99.20%	61.62%	79.88%

TABLE 6.4 continued

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
CATEGORY: FURNISHINGS			
BRASS TACKS	0	24	59
CANDLE HOLDER	0	0	7
CANDLE SNUFFER	0	0	1
DRAWER HANDLE	0	2	16
FIRE TONGS	0	1	1
FURNITURE HIINGES	2	9	30
HASP LOCK	1	6	72
TOTAL	3 0.20%	42 1.67%	186 2.42%
CATEGORY: STORAGE			
BARREL HOOOPS	0	4	462
TOTAL	0 0.00%	4 0.16%	462 6.01%
CONTEXT TOTALS	1496	2517	7685

reader that this category also contains substantial portions of the artifacts recovered at Forts Ouiatenon and Michilimackinac.

Forks and **Spoons** appear to be poorly represented at all three fort sites. Only six items from this class were recovered from Fort de Chartres: three spoons and three forks. The reader should note that all three forks are of different types. One is a two-tined fork, one four-tined, and one is only the remnant of a bone fork handle. Hume (1970:180) suggests two-tined forks predate four-tined. Forks with two-tines date to the early 1600s in France, but appear to be replaced by four-tined sometime during the eighteenth century.

Of the three **spoons** (Figure 6.9), two are made of pewter with egg-shaped bowls. These are common on historic sites of the colonial period (Noble 1984:321). Hume (1970:183) states that the egg-shaped bowl became popular in Europe as early as 1710. The third spoon in the Fort de Chartres collection is made of iron. Iron spoons are rare; only one was recovered from Fort Michilimackinac (Stone 1974:183) and none at Ouiatenon.



Figure 6.9 Context of Behavior - Household
Category: *Food Preparation and Consumption*
(A) Ladle Handle (B and C) Spoons

Sixteen **kettle** fragments (Figure 6.10) were recovered during the Fort de Chartres excavations. One fragment was brass and all the others were cast iron. Of the fifteen cast iron fragments, four contained rim elements, ten are body element fragments, and one is a base fragment with one leg. Kettles are found at almost every eighteenth-century French colonial site (Noble 1984:253). The most comprehensive collection is from the Trudeau Site (Brain 1979:134-139) where 56 complete vessels were recovered and classified into four distinctive types. The items in the Fort de Chartres assemblage, however, are only fragments. They contain no diagnostic elements that would allow further classification.

In addition to the kettle fragments mentioned above, two S-shaped **kettle hooks** (Figure 6.11) were recovered from Fort de Chartres. Noble (1984:258) suggests that these items were probably manufactured on site. One iron serving spoon or ladel handle (bowl is missing) and one iron pan handle fragment were also recovered.



Figure 6.10 Context of Behavior - Household
Category: Food Preparation and Consumption
Cast Iron Kettle Fragment



Figure 6.11 Context of Behavior - Household
Category: *Food Preparation and Consumption*
Pot Hooks

Glass, like ceramics, is ubiquitous at most sites dating to the colonial period. Two thorough discussions of eighteenth-century French tableware were provided by Margaret Kimball Brown (1971) in her examination of glass from Fort Michilimackinac and by Paul McNally (1979) in his discussion of tableware from the Fortress of Louisbourg. The frequency of complete glass artifacts from both of these sites is extraordinary. The assemblages at other sites are less noteworthy.

As can be seen in Table 6.4, glass has been classified into two major categories: **Tableware** and **Bottle Glass**. Noble (1983:183) recognized two additional categories in the Fort Ouiatenon collection: window glass and mirror glass. These, however, are difficult to date on multi-component sites. Since the sites examined in this analysis contain British components, and in the case of Fort de Chartres a late nineteenth-century component, they have been removed from this analysis.

The Fort de Chartres assemblage contains hundreds of glass artifacts. Of these, 111 possessed enough diagnostic features to be

classified as **Tableware**, 83 exhibit features characteristic of eighteenth-century French tableware, the rest appear to be of British origin. Since this analysis is concerned only with the French occupation at all three forts, only Tableware (Figures 6.12 and 6.13) distinctly French in origin are represented in Table 6.4.

The primary difference between French and British tableware or crystal is the chemical compound used as a stabilizing oxide that makes the final product insoluble in water. In the eighteenth century the British used lead as a stabilizing agent and the French (as well as the Italians) used lime or soda (McNally 1979:9-12). When exposed to ultraviolet light, table glass containing lead appears blue.

Bottle glass is also found on virtually all eighteenth-century colonial sites. The Fort de Chartres assemblage contained hundreds of bottle fragments - most were undiagnostic body sherds. However, 165 fragments possess diagnostic elements that enable us to distinguish between French bottle glass and British bottle glass. As can be seen in

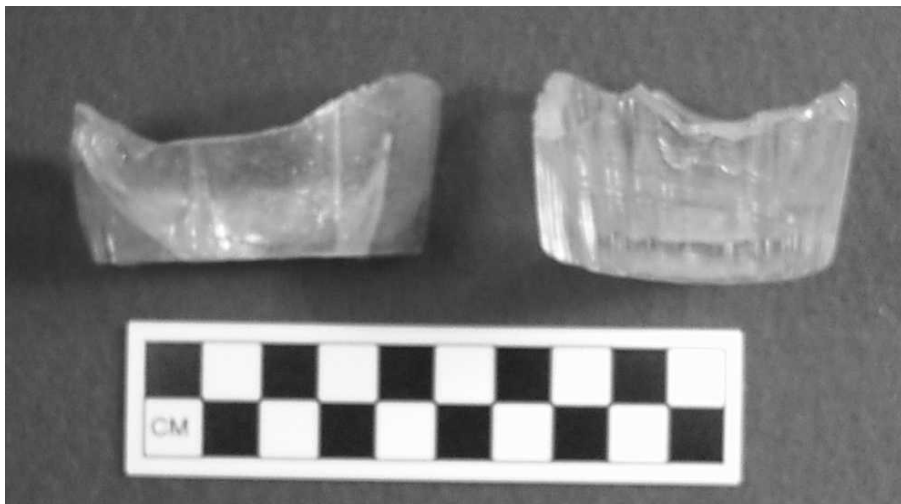


Figure 6.12 Context of Behavior - Household
Category: Food Preparation and Consumption
Tableware Tumbler Bases



Figure 6.13 Context of Behavior - Household
Category: *Food Preparation and Consumption*
Tableware Stemware fragments

Table 6.4, 108 bottle glass fragments are attributed to the French occupation at the fort.

Eighteenth-century French bottles can be distinguished from eighteenth-century British bottles by examining two bottle elements: the string rim around the neck and the 'push up' or kick at the base. The string rim around the neck of British bottles is well tooled and uniform in size, whereas the string rims of French bottle (Figure 6.14) were poorly tooled and pinched in two or three places to affix it to the neck (Hume 1970:69).

The 'push up,' or 'kick' in the base of the bottle contains a feature referred to as a pontil mark (Figure 6.15). During the finishing process, a rod or pontil was attached to the base of the bottle in order for the blow pipe to be removed from the neck and the neck finished. The British used a pontil dipped in sand. This sand pontil technique prevented the pontil from "adhering too closely to the bottle" (Jones 1971:69) thereby limiting breakage and scaring.



Figure 6.14 Context of Behavior - Household
Category: Food Preparation and Consumption
Bottle necks



Figure 6.15 Context of Behavior - Household
Category: Food Preparation and Consumption
Bottle base or 'kick' with pontil mark

The French used a different empontilling technique. Either a plain glass-tipped pontil or a blow pipe pontil was used in the finishing process. Both techniques left characteristic marks. The blow pipe pontil often left a circular ring of glass, or the scars from the blow pipe in the push up. The glass tipped pontil often tore glass from, or left an irregular glass deposit in the push up. This irregular glass deposit is referred to as 'glass gather' (Jones 1971:71).

Olive or dark green bottles, sometimes referred to as wine bottles, contained either wine or distilled spirits (Brain 1979:85). Eighty-eight diagnostic bottle fragments were of this type. The remaining 20 bottle glass artifacts were either clear or blue green flacon or fioles bottle fragments.

CONTEXT OF BEHAVIOR: STRUCTURAL

The **Structural** Context of Behavior is one of the most poorly represented in the artifact assemblage at Fort de Chartres (Table 6.5). This, however, is most likely due to the difference in building materials used at the three forts, i.e., Fort de Chartres was made of limestone whereas the other two were of wood construction. In fact limestone

TABLE 6.5
Frequency of artifacts by class and category
within the Structural Context of Behavior

	Fort de Chartres	Fort Quiatenon	Fort Michilimackinac
CATEGORY: HARDWARE			
DOOR LOCK	6	1	49
HINGE/PINTLE	9	52	219
KEYS	4	11	42
KEYHOLE ESCUTCHEON	0	0	25
BOLT, NUT, WASHER	0	6	12
DOOR, GATE, SHUTTER HOOK	1	2	14
DOOR LATCH HARDWARE	5	17	30
SCREWS	0	46	19
STAPLES	2	28	52
COTTER PINS	0	5	0
IRON HOOKS	2	6	0
CHAIN LINKS	1	11	0
PADLOCK	0	12	4
MASONRY ANCHORS	2	0	0
TOTAL	32	197	466



Figure 6.16 Context of Behavior - Structural
Category: Hardware
Door Hinge Fragments

rubble is ubiquitous at Fort de Chartres. This fact is not represented in Table 6.5. In addition, the soils at Fort de Chartres are extremely wet. Very few metal artifacts from recent history survive long. Iron artifacts from the eighteenth century have very little chance of survival.

CONTEXT OF BEHAVIOR: PERSONAL

The largest class within the Activities Category of the Personal Context of Behavior and indeed within the entire context of behavior at all three fort sites is **clay pipes**. Clay pipes, often referred to as kaolin pipes, were manufactured in England and the Netherlands during the seventeenth and eighteenth centuries (Walker 1971:60). Though pipes of Dutch manufacture are more common on French colonial sites dating to the first half of the eighteenth century (Walker 1971:56; Stone 1974:151), British pipes are not rare. Noble (1983: 312) suggests that the frequency of clay pipe fragments on historic sites of this period reflect both the popularity of the item for trade and personal use and its fragility.

Clay pipes exhibit diagnostic elements that facilitate the determination of place and date of manufacture. Stem bore diameters

of British pipes have been shown to decrease over time (Harrington 1954; Binford 1962), and pipe bowls often contain maker's marks and distinctive rim design elements (Walker 1971). One pipe bowl fragment from the Fort de Chartres collection contains a maker's mark. Walker (1971:65) suggests that pipes with the mark "TD" were manufactured by Thomas Dormer in London during the 1750s and 1760s.

As can be seen in Table 6.6, the Fort de Chartres collection contains 74 kaolin or clay pipes (Figure 6.17). All of these are fragments, 17 bowl and 57 stem. As mentioned above only one pipe bowl fragment contained an identifiable maker's mark.

In addition to clay pipes, pipes from two other classes are represented in the Fort de Chartres collection. Stone pipes (Figure 6.19) are less frequent than clay pipes on eighteenth-century historic sites, but are still well represented at Forts Michilimackinac and Ouiatenon (Table 6.6). Twelve stone pipes, six L-shaped or Calumet pipe fragments, and six mic-mac pipe fragments were recovered. The Calumet-shaped pipe fragments are all stem sections; four are made of catlinite and two of

TABLE 6.6
Frequency of artifacts by class and category
within the Personal Context of Behavior

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
CATEGORY: ACTIVITIES			
CHESS PIECES	0	0	1
CRUCIFIX	1	7	20
CUP AND PIN	0	1	8
DICE	0	0	3
FIGURINES	0	10	0
GAMING PIECES	0	0	14
JETONS	0	1	0
KAOLIN PIPES	74	3087	5328
MARBLES	0	0	20
MOUTH HARPS	1	27	122
MUSICAL INSTRUMENT	0	1	0
PEWTER PIPES	0	0	0
POTTERY PIPES	0	2	0
RELIGIOUS MEDALLION	0	0	7
ROSARY BEADS	0	40	179
STAMPED DISC	0	1	0
STONE PIPES	12	214	992
WHIZZER	1	7	12
TOTAL	89	3398	6706
	54.60%	86.13%	70.95%

TABLE 6.6 continued

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
CATEGORY: WRITING			
INK WELL	0	1	0
LEAD PENCILS	0	2	25
LETTER SEAL	0	0	1
TOTAL	0	3	26
	0.00%	0.08%	0.28%
CATEGORY: GROOMING			
COMBS	0	6	46
HAIR BRUSHES	0	0	1
RAZORS	0	0	6
TOTAL	0	6	53
	0.00%	0.15%	0.56%
CATEGORY: CLOTHING			
BUTTONS	44	98	771
BUCKLES	18	54	426
CUFFLINKS	0	25	112
HOOKS AND EYES	1	13	152
ICE CREEPERS	0	0	5
ICE SKATES	0	0	1
SHOE HEEL PLATE	1	1	33
TOTAL	64	191	1500
	39.26%	4.84%	15.87%
CATEGORY: ADORNMENT			
BONE BEADS	0	2	0
BRASS WIRE RING	1	1	0

TABLE 6.6 continued

	Fort de Chartres	Fort Ouiatenon	Fort Michilimackinac
EARRINGS	0	0	13
HAT PINS	0	0	1
JEWELRY CHAIN	0	1	17
LEAD/PEWTER ORNAMENTS	0	8	0
MEDALLION	0	1	0
MISC. PENDANTS	9	77	11
PERFORATED TRIANGLE	0	31	0
SHELL BEADS	0	1	0
TINKING CONES	0	225	1125
TOTAL	10	347	1167
	6.13%	8.80%	12.35%
CONTEXT TOTAL	163	3945	9452

limestone. Three of the six artifacts classified as mic-mac pipes are complete bowls, two are bowl fragments, and one a base fragment.

Stone pipes were manufactured by American Indians and not the French. They are included in this section since it is assumed that these pipes were acquired by the French for personal use.

Buttons are the largest class of artifacts in the Clothing Category at all three fort sites. The sample from Fort de Chartres contains four different classes of buttons when classified in the MSU system. The number of components or elements a button contains determines its assignment to a certain class. In Class I, for example, the crown and back of the button are single elements with the eye element separate. In Class II, the crown and back are a single element separated by a hollow space. The eye element is separate. In Class III, the crown, back, and filler (between the crown and back) elements are all separate and the eye may be part of the back. And finally, in Class IV, the crown, back, eye and filler elements are all separate.



Figure 6.17 Context of Behavior - Personal
Category: Activities
Kaolin pipe bowl and stem fragments



Figure 6.18 Context of Behavior - Personal
Category: Activities
Mouth Harp



Figure 6.19 Context of Behavior - Personal

Category: *Activities*

(A) Mic-mac pipe bowl, (B) Calumet pipe stem fragment made of limestone, (C and D) Calumet pipe stem fragment made of catlinite

If any observation can be made after this examination of the artifacts at Fort de Chartres in comparison to those at Forts Michilimackinac and Ouiatenon, it is that the difference between the Fort de Chartres assemblage and those of the other two sites is not simply one of varying artifact frequencies. The assemblages differ markedly in not only frequency of artifact types but also in the types of artifacts within each category. Throughout this presentation I have stressed artifacts recovered at Fort de Chartres that are not found at the other two sites. Further examination of the assemblages in the next chapter will assist in explaining these and other observed differences.

CHAPTER SEVEN

STATISTICAL ANALYSIS OF THE ARTIFACT ASSEMBLAGES

THE ASSUMPTIONS OF HISTORY

History and archaeology have a peculiar relationship - particularly in America. The fundamental assumption among archaeologists in the past had been that archaeology begins where history stops - or is it the other way around? There is history and there is prehistory. History covers that period of the more recent past in which we find written records. Prehistory concerns itself with that time prior to written records. In the Midwestern United States this threshold between history and prehistory is usually considered to be somewhere in the 1670s when Marquette and Joliet passed through the Mississippi River Basin and wrote down their observations.

There is a fundamental problem with this assumption, a problem neglected in the United States (please note here that I refer specifically to the United States and not to the Americas or North America).

Documents concerning the last two hundred years of the United States' history fill hundreds of libraries throughout this country. Consequently, our perception that there is a fine line (or at least a well defined gray area) that separates history and prehistory appears to be governed by our national experience. This is not necessarily so in Europe.

A recent best seller, *How the Irish Saved Civilization* by Thomas Cahill, is a perfect illustration of the point being made here. Most of what we know about classical antiquity and the first millennium A.D. can be attributed to the hard work of Irish monks who spent literally lifetimes transcribing ancient documents - documents that existed in multiple form were being destroyed as tribal and ethnic struggles gripped the European continent. These conflicts destroyed most written records (one need only imagine the wealth of the library at Alexandria before it and all its contents were destroyed in the third century in a civil war). Without these Irish monks, Thucydides, Virgil, Ovid, Augustine, Jerome and even Homer would be unknown to us.

In Europe, archaeology departments are often part of history

departments simply because the limits of documents are obvious and the relationship between the documents of the past and the material remains of the past are more clear. And one does not find arguments about the proprietorship of one over the other as we do in the American literature (Lightfoot 1995).

Availability of documentary evidence is only one problem in understanding and studying the past. Of equal importance, particularly for the purposes of this study, is the interpretation of these documents. An often used phrase among historians goes something like this: "Each generation writes history anew - rereading documents of the past and interpreting them within the light of the present." We could discuss the implications of this concept alone for hundreds of pages and not exhaust it. Suffice it to say, documents alone tell little. It is the skill of the interpreter, the historian, that prioritizes and gives meaning to paper and ink.

The professional historian in America has a history somewhat parallel to the professional archaeologist. The writing of history, until the

very end of the nineteenth century, was dominated by "patrician historians" (Grob and Billias 1982:4). These gentlemen have had considerable influence on the writing and interpretation of history well into this century. Throughout the writings of these late nineteenth-century historians, one finds a number of themes associated with the fur trade. Fur traders were marginal individuals from a civilized society who brought the seeds of that society to the wilderness. These individuals were engaged in an activity as old as human kind - hunting. Hunting for furs and challenging the elements of nature, these men were entrepreneurs, rugged individuals fighting the forces of nature for economic gain.

This romanticized image of the fur trade has had considerable influence on subsequent historical investigation. Library shelves are rife with volumes on the fur trade. But do not misunderstand. I do not suggest that the fur trade was unimportant to the early colonization of this continent. Fur trade and the battle for territory were exceedingly important. I suggest, however, that research on the fur trade was conducted at the expense of other topics. The economic activity in the

British and French colonies in North America was far more sophisticated and multidimensional.

Yet the one-dimensional view of the colonial economic activity has had considerable influence on archaeology, particularly on the archaeology of French Colonial America. Emphasis on the fur trade as the prime mover for settlement can be seen in a number of archaeological reports. But the most exhaustive development of an economic model to describe the colonial settlement of the French can be found in Judy Tordoff's research at Fort Ouiatenon, built beside the Wabash River in northern Indiana.

TORDOFF'S FRENCH FUR TRADE MODEL

Though extensive excavations have been conducted on a number of French colonial sites in North America, few publications have focused on developing models or theories to account for type, frequency, or location of material in the archaeological record. Most reports have focused on description of structural remains and construction techniques (e.g., Fry 1984; Lindsay 1975; Harris and Nielson

1972) or artifact descriptions (e.g., McNally 1979; Harris 1979; Brown 1971; Brain 1979). These reports are essentially descriptive, focusing upon the material recovered at one particular site. In only a few instances were artifact frequencies from one site compared with those of another (Miller and Stone 1970).

One of the most extensively excavated French colonial sites in North American is Fort Michilimackinac, on the Straits of Mackinaw. Early excavations at this fur trade site produced over 500,000 artifacts (Stone 1974:xvii). In an attempt to bring order to this vast collection of material, Lyle Stone (1974) developed a classification system for artifacts not unlike the pattern recognition system developed by Stanley South (1977a) for British colonial sites. This classification system set the stage for comparative studies between French colonial sites in the Americas. The most notable of these studies is that of J.D. Tordoff (1983).

Based upon her reading of primary and secondary historic material, Tordoff developed a model that should explain the economic relationships between French colonial and Native American sites in the

mid-continent. The model contains five distinct levels that together constitute the "French Colonial Fur Trade Network"(1983:39).

Tordoff's five-level model is summarized in Table 7.1. It is a hierarchical model that incorporates both French and Native American sites dating to the eighteenth century. It assumes that the primary economic activity - the primary force determining the size, demography and complexity of the site - was the fur trade economy.

Sites are components of a hierarchically organized system. Aboriginal Distribution Centers are at the bottom of this system. Individuals at these sites or centers engaged in primary economic activity - the production of marketable commodities or furs in return for trade or consumer goods. Trade goods were procured from and furs were delivered to Local Distribution Centers.

Local Distribution Centers were located near aboriginal population centers and were linked to Regional Distribution Centers more strategically located along transportation routes. Economic

TABLE 7.1

TORDOFF'S HIERARCHICAL MODEL OF FUR TRADE SETTLEMENTS

Level in Model	Settlement	Characteristics
Port of Entry	Louisbourg Placentia	Major port settlement guarding the transportation route to the interior; characterized by substantial defensive works.
Government/ Economic Center	Montreal Quebec	Cities with high population density; focus of settlement and government; center for colonial trade system.
Regional Distribution Center	Detroit Michilimackinac Frontenac Fort de Chartres Niagra	Located strategically along main transportation routes, represented French presence in Indian lands, center for the redistribution of goods.
Local Distribution Centers	Ouiatenon St Joseph Miami Chequamigon Kaministiquia Nipon Michipicoten	Located in Indian lands and functioned as bases for trading; final collection and redistribution points for trade goods, collection points for furs.
Aboriginal Distribution Centers	Guebert Site Bell Site Zimmerman Site	Primary providers of furs and recipients of trade goods.

activities at these centers or sites were organized and controlled by the main government or economic centers. In New France these would be Montreal and Quebec. These two government centers coordinated shipping activities with the Ports of Entry which were highly fortified ports like Louisbourg on the sea coast. The Ports of Entry are at the top of the hierarchical model.

According to Tordoff, this model has two basic objectives. It is first a "depiction of the geographic distribution" (1983:39) of the French colonial sites in Canada. The five levels represent the westward expansion of the French colonial fur trade economy. Second, this model explains the function of the various fur trade sites within colonial French Canada. These sites "were points of economic and military action designed to maintain the operation of the fur trade" (1983:40).

Upon inspection of Table 7.1 the reader should notice that Fort de Chartres, located in Illinois about 60 miles south of present day St. Louis, is classified as a *Regional Distribution Center* in Tordoff's hierarchical model of the fur trade economy. At the time of Tordoff's

study, there were no available collections from this French colonial site. Consequently, it did not enter into her analysis. However, she does predict - based on her reading of the documents - that Fort de Chartres would contain an archaeological assemblage analogous in structure to other Regional Distribution Centers outlined in her study, e.g., Fort Michilimackinac (Tordoff 1983:44).

THE PROBLEM WITH TORDOFF'S MODEL

Tordoff constructs a series of hypotheses based upon the assumptions of this model in order to evaluate its ability to explain the French colonial economy. She then uses archaeological evidence recovered from a number of sites to test these hypotheses. Essentially, she tests the veracity of a model developed from historic sources with archaeological data. In her own words she concludes, "the thesis that evidence of this hierarchy will be archaeologically visible cannot be strongly supported, nor can it be rejected absolutely" (1983:143).

There are two fundamental problems with Tordoff's model. First, it is based on an uncritical acceptance of primary and secondary historic

sources. As did her predecessors in this century, she is influenced by the "patrician history" of the eighteenth century. In fact, much of her work relies heavily upon secondary sources. She views the past through the eyes of other interpreters.

The second problem, intrinsically related to the first, is the acceptance of fur trade activity as the primary economic activity of the eighteenth-century French colonies. The five-tiered hierarchical model developed by Tordoff assumes that the fur trade was the primary economic activity influencing the settlement strategies of the colonists. As will be demonstrated later in this discussion, the economic strategies of the eighteenth-century colonists were far more sophisticated.

COMPARISON OF THREE ASSEMBLAGES

In the previous chapter, we described the artifact assemblage at Fort de Chartres and compared artifact frequencies by class between Fort de Chartres, Fort Michilimackinac, and Fort Ouiatenon. cursory examination of these raw frequency data indicates that there are substantial differences between the various assemblages. Comparing

the three assemblages by class is somewhat cumbersome. In this section the classes will be collapsed into their respective categories and contexts in order to illustrate graphically the similarities and differences among the three assemblages. In addition, a statistic, or index referred to as the index of dissimilarity, will be applied to the data in an attempt to quantify the relationships between the assemblages at the three forts.

In Figure 7.1 the relationships between artifact classes grouped within their respective context of behavior are presented in a bar graph. Noticeable differences exist between sites in each context except the Structural Context. Examination of Table 7.2 can help clarify this. Structural remains, as outlined in Chapter 6, consist mainly of hardware, i.e. door latches, screws, hinges, etc. There are, however, other types of structural remains recovered at each of these forts that are extremely difficult to quantify and even more difficult to compare.

All the structures at Fort de Chartres were constructed of limestone - as was the fort itself. During the course of all excavations, the site was littered with limestone rubble. The size of the rubble ranges

FIGURE 7.1
CONTEXTS OF BEHAVIOR COMPARED
BY SITE

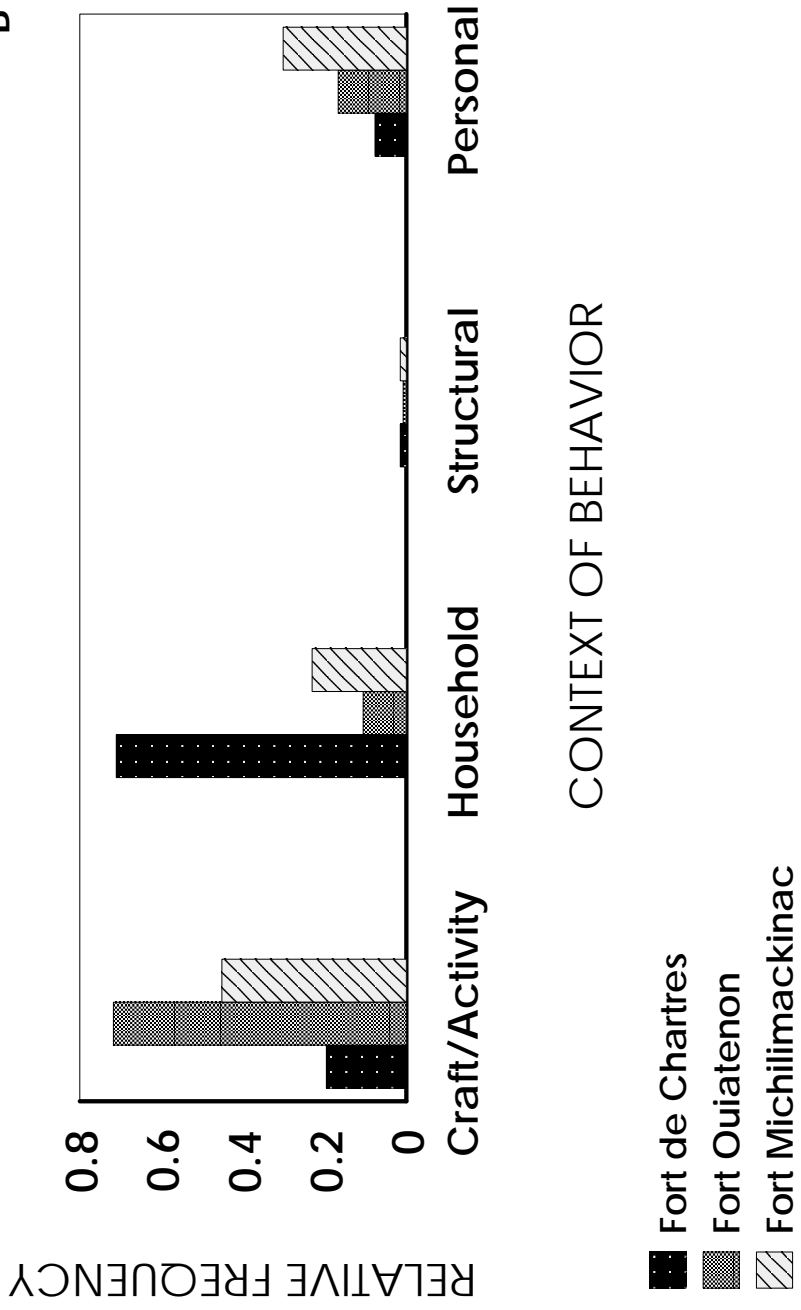


TABLE 7.2
FREQUENCIES AND RELATIVE FREQUENCIES OF ARTIFACTS BY CONTEXT OF BEHAVIOR

CONTEXT OF BEHAVIOR	FORT DE CHARTRES		FORT OUIATENON		FORT MICHIMACKINAC	
	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY
CRAFT/ACTIVITY	413	19.63%	16966	71.81%	14086	44.45%
HOUSEHOLD	1496	71.10%	2517	10.65%	7685	24.25%
STRUCTURAL	32	1.52%	197	0.83%	466	1.47%
PERSONAL	163	7.75%	3945	16.70%	9452	29.83%
TOTAL	2104	100.0%	23625	100.0%	31689	100.0%

from small hand-sized chunks to large thousand-pound blocks. In addition remains of mortar are ubiquitous on the site. At Michilimackinac and Ouatonenon, on the other hand, post molds from the picket stockades are found in great quantity.

Issues concerning construction and the structural remains at these forts differ from those in the other artifact groups. It will be outlined in the following chapter that the structure and construction issues are more qualitative than quantitative, and they focus on organization of labor and social status of the communities that they served.

The other three artifact groups or Contexts of Behavior directly relate to cultural activity and behavior during the periods of occupation. Figure 7.1 (and the accompanying frequency table) suggest some profound differences in the relative frequencies of artifacts among the three sites, and consequently, differences in cultural activities at the forts. Over 70% of the artifacts recovered at Fort de Chartres fall within the Household Context. At first glance this may appear peculiar because the population that Fort de Chartres served, except for some

of the soldiers, lived outside the fort. This is in contrast to the colonists at Fort Michilimackinac and Ouatonenon, who lived within the walls of the stockaded fort.

How can we account for this? I suggest two possible explanations. The first and most obvious is simply statistical. It is because most of the population lived outside the fort that all other artifact categories, well represented at the other two forts, are poorly represented at Fort de Chartres. Though the actual count of artifacts in the Household Context is less at Fort de Chartres than at Michilimackinac and Ouatonenon it commands a higher percentage of the total assemblage since the other artifact contexts are so poorly represented.

This serves the argument here well. The focus should not be on the high percentage of household artifacts. It should be the absence of artifacts in the other categories. After all, if Fort de Chartres had no artifacts other than 100 ceramic fragments, the Household Context would be 100%!

We need to consider another explanation, however. Fort de Chartres did not serve as a residential compound for the colonists as did Forts Michilimackinac and Ouiatenon. It served as a social and economic center. As pointed out by Noble (1997:70), the ceramic assemblage at Fort de Chartres contains a greater variety of high quality ceramics than are found at the other two forts. Fort de Chartres, as the economic and governmental center of the colony, would have been the place where the elite of the colony met for social and economic activities - in many cases this would have been within the context of prepared meals.

As mentioned above, artifacts classified in the Personal Context of Behavior are poorly represented at Fort de Chartres in comparison to the other two forts. This reflects more accurately population and settlement structures at these forts. With more individuals living inside the fort compound, we would expect to find more items of a personal nature than where the *habitants* lived in villages outside the fort.

This logic can also be extended to artifacts grouped in the

Craft/Activity Context of Behavior. When the *habitants* reside within the fort walls, there should be a greater number of items used in day to day economic activity represented than at a fort where the *habitants* reside in an outside village.

Obviously, settlement strategy is an important determinate in predicting artifact frequency. The reasons for the differences in settlement strategy will be discussed in more detail in the following chapter.

A more detailed summary of artifact frequencies and relative frequencies by Context and *Category* can be found in Table 7.3. The table suggests that there is little uniformity. Some categories have a disproportionately large number of artifacts that influence the relative frequency of the Context of Behavior. For instance, the Commercial Category at Fort Ouiatenon contains over 13,000 items, that help make the Craft/Activity Context of Behavior dominant.

TABLE 7.3
FREQUENCIES BY ARTIFACT CATEGORY

	FORT DE CHARTRES		FORT OUIATENON		FORT MICHILIMACHINAC	
	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY
CRAFT ACTIVITY						
Subsistence	5	0.24%	27	0.11%	236	0.74%
Arms	340	16.16%	3231	13.68%	5097	16.08%
Commercial	41	1.95%	13626	57.68%	8609	27.17%
Special Skills	10	0.48%	69	0.29%	116	0.37%
Measuring	0	0.00%	1	0.00%	18	0.06%
Transportation	17	0.81%	12	0.05%	10	0.03%
HOUSEHOLD						
Maintenance	9	0.43%	920	3.89%	898	2.83%
Food Prep	1484	70.53%	1551	6.57%	6139	19.37%
Furnishings	3	0.14%	42	0.18%	186	0.59%
Storage	0	0.00%	4	0.02%	462	1.46%
STRUCTURAL						
Hardware	32	1.52%	197	0.83%	466	1.47%
PERSONAL						
Activities	89	4.23%	3398	14.38%	6706	21.16%
Writing	0	0.00%	3	0.01%	26	0.08%
Grooming	0	0.00%	6	0.03%	53	0.17%
Clothing	64	3.04%	191	0.81%	1500	4.73%
Adornment	10	0.48%	347	1.47%	1167	3.68%
TOTALS	2104	100.00%	23625	100.00%	31689	100.00%

THE INDEX OF DISSIMILARITY

In order to illustrate further the differences among assemblages at these three sites a statistic known as the *Index of Dissimilarity* will be employed. This index measures the strength of similarity between two population distributions. It is based upon the Lorenz Curve, first introduced in 1905, and is used to measure the inequalities in the distribution of wealth or income between two populations.

In this context, income categories are set, for example, under \$5000, \$5000 to \$10,000, \$10,000 to \$15,000, etc., and the percentage of individuals or families from each population reporting income in these categories is recorded. The sum of the absolute value of the differences between the relative frequencies in each category is computed and then divided in half. The resulting number between 0 and 100 is the Index of Dissimilarity or inequality between the two populations. Graphically this number would represent the maximum distance between the diagonal and the curve on the Lorenz Curve. The higher the index number the greater the dissimilarity between populations.

The Index of Dissimilarity (a variation of the index of concentration) was first introduced as a variation of the Lorenz Curve in 1933 (Yntema 1933). Later, the Index was adapted by geographers to compare population distributions and concentrations in various areas, and by demographers to compare age distributions between two populations (Duncan 1958; Shryock 1976). It gives results similar to those obtained by employing the statistic developed by Robinson and Brainerd (1951) for seriation and chronological ordering of ceramics. It differs in that it requires fewer calculations.

The formula for the Index of Dissimilarity is as follows:

$$\Delta = 1/2 \sum_{i=1}^k |x_i - y_i|$$

Where x is the relative frequency in a category of one site;
 Where y is the relative frequency in a category of another site;
 Where i is the first set of values;
 Where k is the maximum set of values.

When applied to the data presented in Table 7.2 and arranged for computing the Index, the result can be found in Table 7.4.

TABLE 7.4
CALCULATIONS FOR THE INDEX OF DISSIMILARITY

	RELATIVE FREQUENCY FORT DE CHARTRES (A)	RELATIVE FREQUENCY FORT MICHILMACKINAC (B)	RELATIVE FREQUENCY FORT OUIATENON (C)	A-B	A-C	B-C
ARTIFACT CATEGORY						
Craft/Activity	19.63%	71.81%	44.45%	.5218	.2482	.2736
Household	71.10%	10.65%	24.25%	.6045	.4685	.1360
Structural	1.52%	.83%	1.47%	.069	.005	.0064
Personal	7.75%	16.70%	29.83%	.895	.2208	.1313
TOTAL				1.223	.9381	.5473
INDEX OF DISSIMILARITY				.61	.47	.27

The Index of Dissimilarity between Fort de Chartres and Fort Ouiatenon is 61; between Fort de Chartres and Michilimackinac 47; and between Michilimackinac and Ouiatenon 27. These numbers suggest that there are greater differences between the artifact assemblages at Fort de Chartres and Fort Ouiatenon than between Fort de Chartres and Fort Michilimackinac, and that the difference between the Fort Michilimackinac and Fort Ouiatenon assemblages are the least.

The results of this analysis supports one of the main theses of this study. There are real differences between the artifact assemblages at the three forts. The difference between Fort de Chartres and the other two forts is more substantial than the difference between Forts Ouiatenon and Michilimackinac. In order to explain these observed differences we need to build a model.

CHAPTER EIGHT

AN ECONOMIC MODEL OF THE EIGHTEENTH-CENTURY FRENCH COLONIES

The two prior chapters provide evidence of substantial differences among the archaeological assemblages of Forts de Chartres, Michilimackinac, and Ouiatenon. These differences call into question the veracity of the Fur Trade Hierarchy model proposed by Tordoff and still used by others. Part of the problem with the hierarchical model is that it is essentially static. It focuses on only one element of a sophisticated and complex economic system. In this chapter a more dynamic model will be proposed, i.e., one that will, it is hoped, take into account the variation in the artifact assemblages outlined in Chapter 6 and the construction behavior in Chapter 5.

In order to develop this model, it is necessary to expand discussion and examine the settlement systems of a few other eighteenth-century French colonial sites. The following discussion will include references to the Fortress of Louisbourg and Port Royal in Nova Scotia. A discussion of the settlement systems at these additional sites

will help us to better understand that Fort de Chartres operated as an *entrepot* in a much larger economic system and not simply as a fur trade post in the wilderness of North America.

SETTLEMENT PATTERNS

The Fortress of Louisbourg constitutes one of the most impressive colonial settlements on the North American continent (Figure 8.1).

Louisbourg was first constructed in the 1740s by the French. Built in the Vauban style, it was a walled town that operated as a seaport where ocean resources - primarily cod from the North Atlantic - were processed, packaged, and shipped to Europe. In addition to food resources, furs from the interior were also processed here. The dominant commercial activity however, was fishing.

Two characteristics of this settlement should be noted. First, the interior of this fortress was laid out in a grid pattern - very characteristic of the Vauban style. Second, the entire settlement - except for some small fishing camps and redoubts - was located within the walls of the fortress. The economic activity of processing cod, shipping, and other ancillary

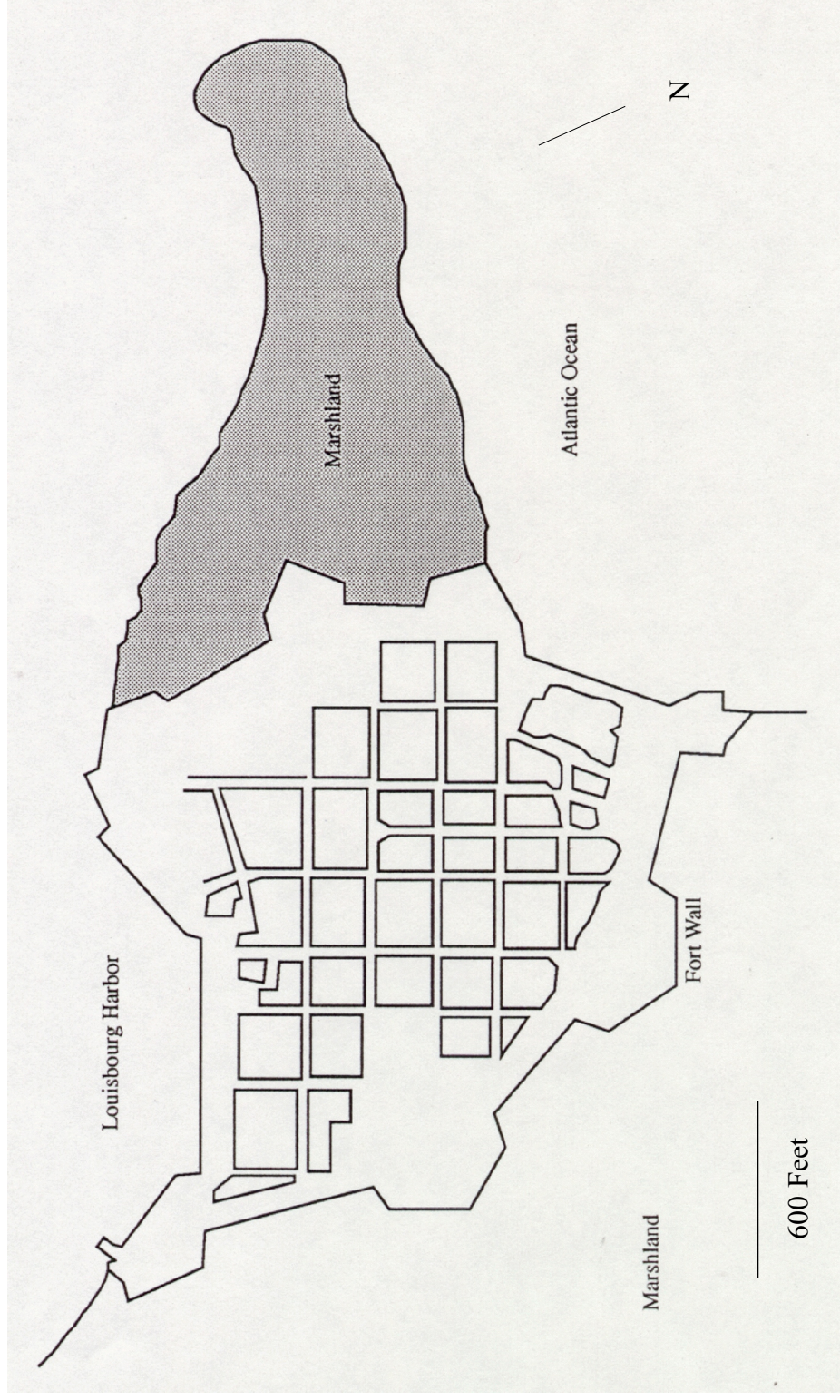


Figure 8.1
Settlement Pattern at the Fortress of Louisbourg, 1745
(after Harris 1987, Plate 24)

commercial activity was centralized.

Fort Michilimackinac was initially constructed by the French sometime between 1715 and 1717. Built of cut timber, this post was constructed to facilitate the fur trade and relations with native populations involved in fur trade activity (Stone 1974:8). Furs were brought here by various Indian groups and trappers to be processed, packaged, and shipped to Montreal or Quebec before being shipped to France for sale on the European markets.

Michilimackinac (Figure 8.2) is a wooden stockade fort similar to a Vauban style fort only in an analogous sense. We find at this fort, as at Louisbourg, a grid pattern town layout with all of the colonial inhabitants residing inside the walls of the fort. There are some marked differences, however. Although both were fortified towns, the Fortress of Louisbourg had a massive stone wall similar to the fortresses Vauban constructed on the French frontier in the seventeenth century. The construction of Louisbourg required thousands of men working with engineers and craftsmen. Because it was constructed with wooden pickets,

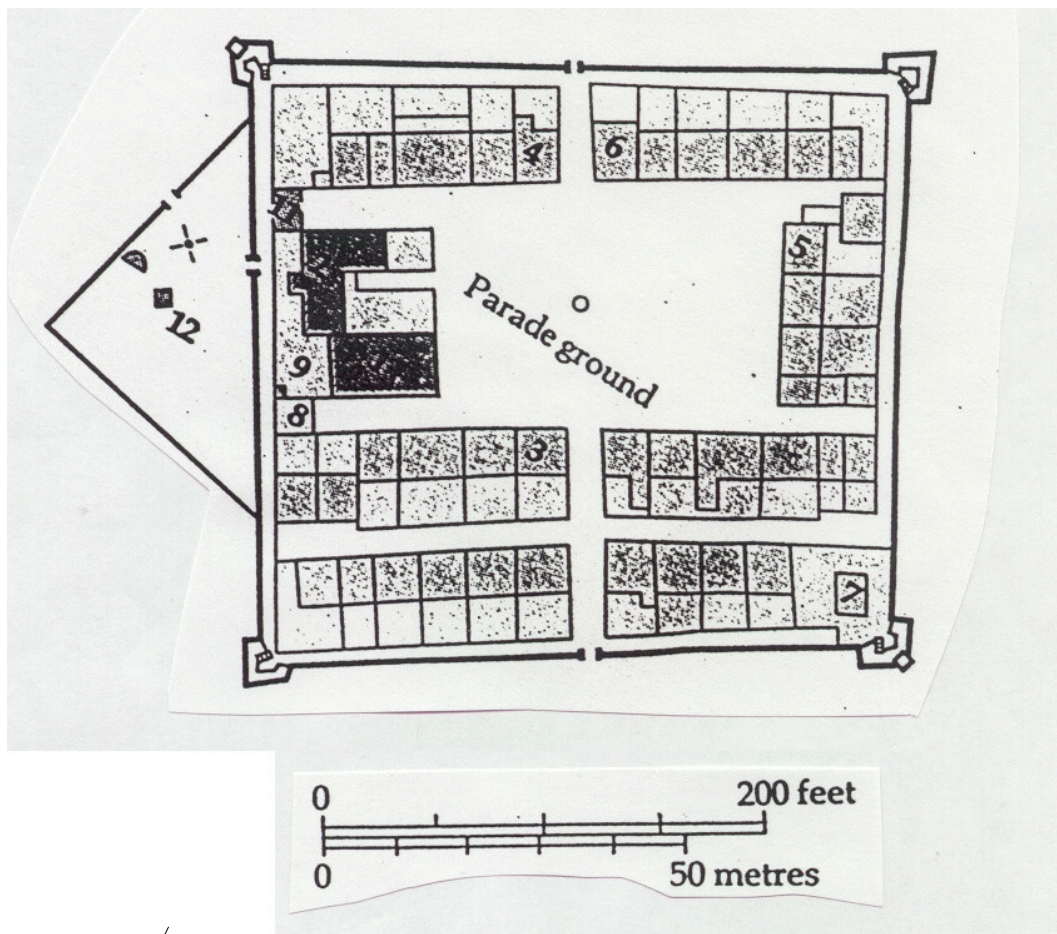


Figure 8.2
Fort Michilimackinac in 1749
(after Harris 1987, Plate 41)

N

Michilimackinac required only unskilled labor.

Like Louisbourg, Michilimackinac was a center of economic activity. The economic activity in both places focused on the processing of resources gathered or extracted from the environment. These sites served as centralized redistribution centers providing a link between Europe and its frontier. Manufactured goods from Europe were brought in for distribution, and resources extracted from the frontier were processed for shipment to European markets. In an examination of the colonization of the twentieth- century Ecuadoran frontier, Casagrande and colleagues, defined such settlements as **entrepots**.

The entrepot provides the vital link between the area of colonization and the metropolitan area, it is the terminus of the transportation system that serves the frontier. Through it pass the goods essential to the welfare of the area of colonization. And occupying as it does a crucial position with respect to the transportation network, it usually provides the major link of the settlement within the area of colonization with the national level of socio-cultural integration (Casagrande et al. 1964:312).

The settlement systems at both Louisbourg and Michilimackinac are influenced by the economic activity in which they were engaged. Colonists at Louisbourg were engaged in economic activity requiring craftsmen and labor necessary to support various maritime ventures like shipbuilding and repair (e.g., carpenters, tar and pitch manufacture, blacksmiths, and net makers), and labor for processing and drying fish. All of these tasks required the collective activity of a community.

Extracting furs from the frontier did not require the collective labor and structured social hierarchy utilized in the maritime-focused economy at Louisbourg. Instead, the economic activity at Michilimackinac centered on the labor of individuals. Where fishing for cod required a large vessel with a crew, trapping furs required the skill of lone trappers.

The similarities and differences in the economies of both sites are reflected in the residence pattern. All the colonists at Louisbourg and at Michilimackinac resided inside the walls of their respective forts. The processing of extracted resources was centralized and took place within

the fort settlement. This residence pattern appears to be indicative of an extractive economy within a colonial context.

The settlement pattern at Fort de Chartres is different from those at Louisbourg or Michilimackinac. Though structurally homologous to Louisbourg, built on the Vauban model, Fort de Chartres never housed civilian populations. In fact the interior layout of the fort indicates a military camp and not a town as in the previously discussed forts.

The civilian population in the Illinois Country was located in a series of villages within the vicinity of Fort de Chartres. And, as in the case of Louisbourg and Michilimackinac, the settlement pattern in Illinois was structured in response to economic activity (Figure 8.3).

The economy of the French in Illinois did include trading furs and mining, but for the vast majority of the inhabitants farming was the chief occupation during most of the year.

The convoys from the Illinois country carried to the Gulf settlements, in 1748, 800,000 pounds of flour alone. Besides the flour the cargoes were

made up of corn, bacon, hams from the bear as well as the hog, salt pork, buffalo meat, tallow, hides, tobacco, lead, copper, small quantities of buffalo wool, venison, bear's oil, tongues, poultry and peltry, chiefly, however, the loads were made up of pork and flour. (Surrey 1916:293).

By the middle of the 1750s and well into the French and Indian War, Illinois supplied grain not only to Louisiana and the Caribbean but also to the outposts in the Ohio River Valley. This included Fort Ouiatenon, Massac, and Fort Duquesne (Pease and Jenison 1940:892-893).

An agricultural economy is an economy of **production** as opposed to an economy of collection, gathering, or **extraction**. It is labor intensive and land intensive, i.e., labor input per unit of land and output per acre of land are high in comparison to an extractive economy. It implies that land is treated as a commodity and the processing and shipping of the surplus requires some central administrative authority. In a mercantile economy that central administrative authority is the state, and in a colony the arm of the state

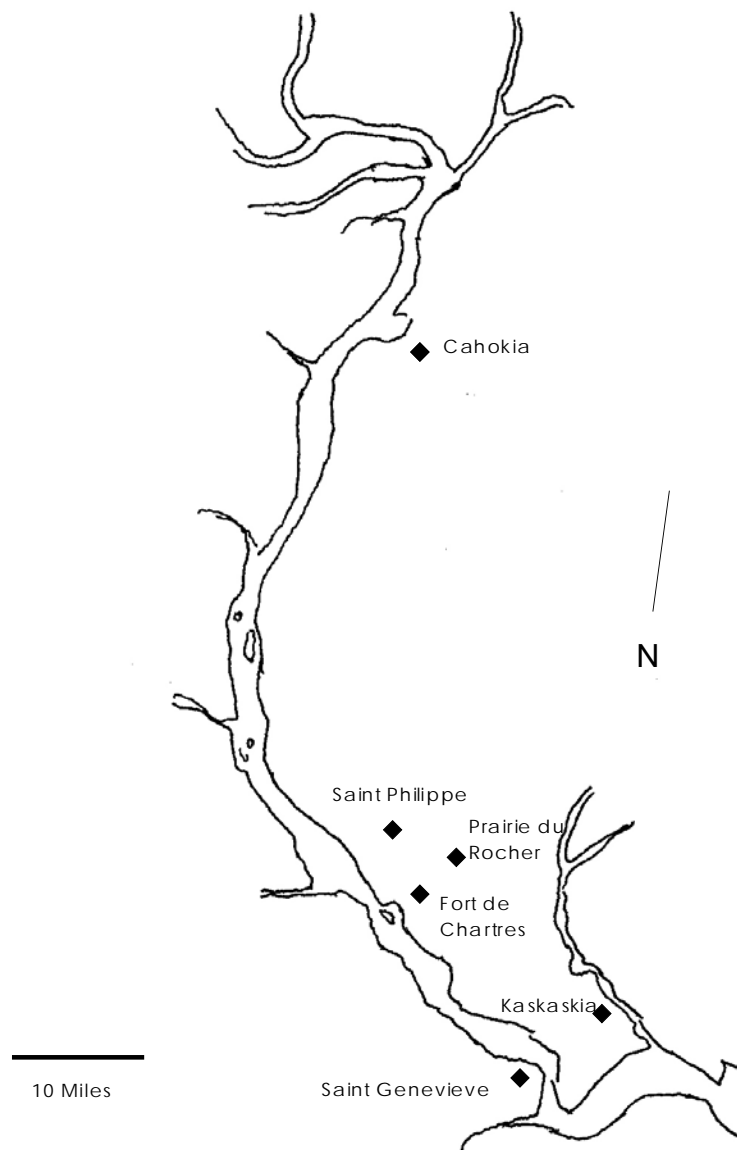


Figure 8.3
French Settlements in the Illinois
Country in the 1750s
(after Harris 1987, Plate 41)

is the local government. Fort de Chartres was the seat of local government in the Illinois Country.

As with Louisbourg and Michilimackinac, the size and structure of the population in Illinois reflect economic activity. In 1752 Louisbourg was occupied by 1500 military personnel, 674 fishermen, 437 Engages and other servants and 1349 residents (Clark 1968:280). The 1752 census records of the Illinois Country indicate that there were 151 soldiers, 670 inhabitants or farmers, 401 Black slaves, and 133 native Indian slaves (Harris 1987: Plate 41).

The substantial number of slaves - almost 40% of the 1752 population of the Illinois Country - suggests that the demand for field labor was high. In fact the shipment of black slaves from Louisiana to Illinois became an issue between the two colonies. In 1749 a Louisiana court put a prohibition on the shipment of black slaves to Illinois. Slaves were a scarce commodity in high demand in both colonies. At one point the governor of New France in a letter to the Minister Rouille in France noted:

...that there was no other means to induce the inhabitants of that country [Illinois] to cultivate their lands. As it was, they left the land entirely to the labor of their negroes and remained in an indolence from which nothing else could draw them..... M. de Vaudreuil has since perceived that this prohibition was a great prejudice to the welfare of the inhabitants of the Illinois who could no longer enlarge their farms. (Pease and Jenison 1940:378)

This information suggests that the production of surplus agricultural products influenced the structure of local population as well as land use strategies and settlement.

Additional support for this hypothesis can be found when examining French settlements similar to Fort de Chartres elsewhere in North America. During the first half of the eighteenth century, French settlements in Acadia other than Louisbourg flourished. One settlement in particular, Port Royal, served as a granary for the rest of Acadia, i.e., the primary activity of the populations at Port Royal was the production of surplus agricultural products (Clark 1968:158). Inspection of Figure 8.4 suggests a pattern of settlement similar to that at Fort de Chartres with a

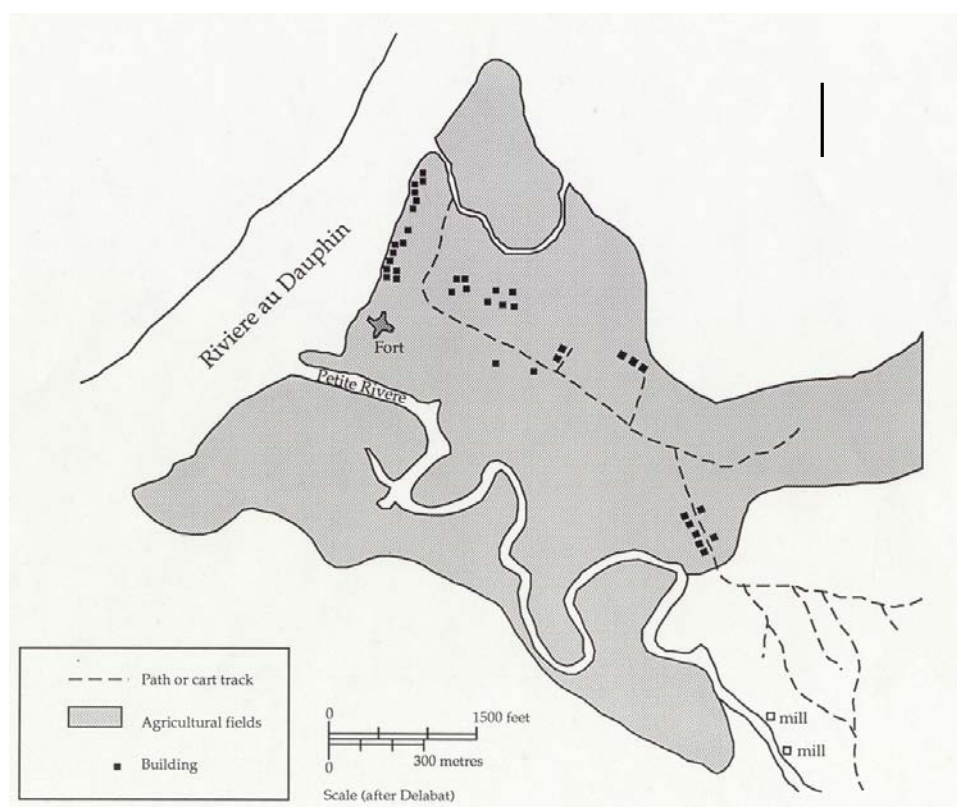


Figure 8.4
Settlement Pattern at Port Royal in Acadia
(after Harris 1987, Plate 29)

small four- bastioned stone fort surrounded by agricultural villages. In addition the internal organization of structures in the fort is similar to those at Fort de Chartres.

Port Royal supplied Louisbourg with grain and other agricultural products just as Fort de Chartres did for New Orleans. The similarity in settlement pattern between these two settlements is not accidental. It reflects the economic activity within the colony. This patterned relationship between the fort structure and local towns and villages was duplicated elsewhere by the French - particularly in Asia and India (Hill 1903:13)

THE MODEL

The model presented here is an attempt to explain the variation in the archaeological and settlement pattern data presented in the preceding discussion. It amends an earlier model presented by Tordoff in which Fort de Chartres and all other eighteenth-century French colonial settlements were ranked in a static hierarchical model that assumed the fur trade was the essential and paramount economic

activity. The data presented here do not support such a model.

The information presented in this thesis suggests that the French set up a series of *entrepôts* throughout their North American colonial empire. In Casagrande's definition quoted above there are essentially three distinct characteristics which define the entrepot as a link between the major metropolitan area (in this case urban areas of France) and the area of colonization.

First, an entrepot "is the terminus of the transportation system that serves the frontier (Casagrande 1964:312)." All the sites discussed in this study, Michilimackinac, Ouiatenon, Fort de Chartres, Louisbourg, and Port Royal fit this criterion. All are regional destination points located along waterways. All are central places where local inhabitants, both Native American and European, gathered to engage in economic activity.

Second, through an *entrepot* "pass the goods essential to the welfare of the area of colonization." Historic documents record more

faithfully the goods shipped from these *entrepots* than those imported. This is particularly true with the documents referenced here for Fort de Chartres. Nevertheless, the artifact assemblages from all of these sites are replete with materials manufactured in Europe and transported to the colonies.

Third, the *entrepot* “usually provides the major link of the settlement within the area of colonization with the national level of socio-cultural integration.” The commandants at Fort de Chartres were in contact with both the governors of New France and Louisiana, and the ministers in Paris. This was also true in the case of the other sites considered here. All goods procured or produced in the settlements were processed or registered at the forts. They acted as the centers for economic activity in their respective regions.

These *entrepots* were primarily engaged in two basic economic pursuits: (1) the **extraction**, processing, and shipping of natural resources, e.g., furs or cod; and, (2) the **production**, processing, and shipping of

surplus agricultural goods. These two distinct economic pursuits produced two different settlement and land use patterns in the various North American French colonies.

Where an *entrepot* was organized around an **extractive** industry, the local population took up residence inside the walls of a fortified structure. The processing and preparation for shipment of resources extracted from the environment by special skilled individuals (in the case of the fur trade) or work groups (as in the case of cod fishing boats) took place within the walls of the fort and within the context of village life. Hides were processed, counted, graded and packed. Cod was dried, smoked, pickled and packed for shipment.

This behavior pattern is reflected in the settlement pattern. *Entrepots* organized around extractive industries will have the greater part of the colonial population residing within the walls of the fort. This is true for Michilimackinac, Ouiatenon, and Louisbourg. The local population or community not only resides within the confines of the fort walls, but also, conducts most of its economic activity within these walls.

This fact is reflected in the archaeological record.

Examination of Figure 7.1 and Table 7.2 will demonstrate this point to the reader. Forts Ouiatenon and Michilimackinac have high frequencies (71.8% and 45.2% respectively) of artifacts in the Craft/Activity Context of Behavior whereas the frequency from this Context of Behavior at Fort de Chartres is low (19.6%). The classes of artifacts grouped within this Context are those which were used in commercial and other related economic activities. More artifact-producing commercial activity was taking place inside Forts Ouiatenon and Michilimackinac than at Fort de Chartres.

The difference, however, is even deeper. In examining Table 6.3 again the reader will notice that the differences between Fort de Chartres and the other two forts are not simply a matter of artifact frequency. There are a number of artifacts present in Michilimackinac and Ouiatenon that are not present at Fort de Chartres and vice versa.

An excellent example of this is the presence of cannon balls,

mortar fragments and grape shot at Fort de Chartres and the absence of these at the other two. If local legends at Fort de Chartres are true, there were also cannon still present at the ruins in the nineteenth century that were subsequently pillaged.

There is a stark contrast between the number of artifacts from Fort de Chartres associated with large artillery (cannon and mortar) and the number of artifacts from the other two forts associated with smaller personal weapons (gunflints, musket balls, and shot). Economies of extraction as represented by Michilimackinac and Ouiatenon require individuals working alone on the frontier to carry and use weapons of a much different nature from economies of production represented by Fort de Chartres.

Habitants engaged in agricultural activities have less need for personal weapons in the course of their work than do individuals facing the dangers of the frontier. In addition, Fort de Chartres represents a growing colony with a government center housed in a structure (the fort) that symbolically represents the presence of urbanized Europe.

Remember that Fort de Chartres , though it housed cannon and was designed on the model of a European fortress, itself could not withstand a cannon attack.

Where an *entrepot* was organized around industries of production, the local population took up residence outside the walls of a fortified structure. The production of agricultural goods requires an organized labor force working outside the wall of the local fortress. There were a number of small villages or population clusters surrounding the fort. Activity inside the fort centered on organizing the shipment of such goods and keeping record of transactions as well as other administrative tasks. This behavior is also reflected not only in the settlement pattern, but also, in the archaeological record.

The artifact assemblages at these sites speak clearly to this. Table 6.6 lists artifact frequencies for the Personal Context of Behavior. Notice how few artifacts from Fort de Chartres fit into this context. Less than 8% of the total artifact assemblage at Fort de Chartres fits into this context whereas almost 17% of the artifacts at Ouiatenon and 30% at

Michilimackinac fit into this context.

Even more graphic is the actual frequency of Kaolin pipe fragments recovered at each site; 5328 at Michilimackinac, 3087 at Ouatennon, and only 74 at Fort de Chartres. The artifact record clearly represents more personal day to day living activity taking place at Michilimackinac and Ouatennon than at Fort de Chartres.

Note, however, that the food preparation class of artifacts is disproportionately represented at Fort de Chartres. Table 7.3 illustrates the fact that over 70% of the artifacts recovered at Fort de Chartres belonged to the Food Preparation Category. This stands in contrast to less than 7% at Ouatennon and less than 20% at Michilimackinac. At first glance this would seem to contradict the interpretation presented in the last paragraph. If the colonial population resides within the fort one would expect the artifact frequencies for food preparation and consumption to be similar to that of personal effects. After all, smoking and eating are similar consumption activities. A closer look at the ceramic assemblage at Fort de Chartres will help clarify this.

In his analysis of the ceramic assemblage at Fort de Chartres, Noble (1997: 70) found a greater variety of ceramics at Fort de Chartres than at either of the other two forts. In addition he found that the ceramics at Fort de Chartres were of higher quality than those at the other two forts. This is not surprising. Fort de Chartres was the seat of government for the entire Illinois Country. It was the center of social as well as military activity for the colony. The social activity here would be different from that at the other two forts. Fort de Chartres was the symbolic center of the colony - a symbol of the French Empire. Here, more formal and ritualized social activity like dinner parties and dances would have taken place. Though the day to day economic activity took place outside the walls of the fort, ritualized social activity of the French hierarchy took place within.

Finally, we can also draw a comparison between economies of extraction and economies of production in another way. Economies of extraction are labor and land extensive. Economic activity takes place in a region that encompasses hundreds if not thousands of square miles and the ratio between labor units (humans engaged in the activity) to

land is low. By contrast, economies of production, are labor and land intensive with a high ratio of labor units to land. This needs to be contrasted with the activity that took place within the walls of the fort.

It would be a mistake to conclude that all the information presented here could be accounted for in a two-part model focusing on economies of production verses economies of extraction. The data suggest a little more depth than that. There seems to be some significant variation between sites that are considered *entrepots* in economies of extraction.

The fortress of Louisbourg is massive in scale, built of stone that required engineers and skilled craftsman. The walls encompassed more than a square mile of land and housed thousands of people. Fort Michilimackinac encompassed only a couple of acres of land. It was built with pickets by unskilled soldiers.

How can we account for this? I suggest that the (1) technology and (2) level of organization of labor needed in various economies of

extraction differ. As noted earlier, extracting furs from the environment was, by and large, a one-person activity. Trapping and dressing beaver did not require a cooperative labor force. It took place outside the confines of the fort and pelts were brought into the fort by either Euro-American trappers or Indians. The tools needed (traps, knives, and light arms) were small and easily handled by an individual. The tools were generally manufactured at an urban center and brought to the *entrepot* as part of economic exchange activity.

Cod fishing in the North Atlantic was much different. Large nets had to be woven and repaired on a regular basis. Deploying the nets required a team of individuals working cooperatively in rather large, sea worthy vessels constructed and maintained at the *entrepot* (Balcom 1984). The manufacture and maintenance of the “means of production” or the tools required to extract the resources required a social order with a structured division of labor at the home *entrepot*.

Finally, there are even differences between Forts Michilimackinac and Ouatatonon. Though both share similar architecture and

construction techniques, the artifact assemblage suggests that Ouiatenon housed a population invested heavily in economic activity with little interest in a permanent or semipermanent settlement. More than 71% of the artifacts recovered at Fort Ouiatenon are from the Craft/Activity Context of Behavior with over 80% of this 71%, or 58% of the assemblage (see Table 7.3) reflecting commercial activity. None of the artifact classes contain more than 28% of the entire assemblage at Fort Michilimackinac with better representation in the other Contexts of Behavior.

The difference between these two sites is most likely attributable to the large number of Native American Villages within the immediate vicinity of Ouiatenon. Consequently, direct trade with the native population required fewer middlemen or fur traders. Trade goods as represented in the “commercial class” were abundant within the fort.

We can get a visual representation of the model by examining Figure 8.5. The French established a number of *entrepôts* throughout their colonial empire in North America. These *entrepôts* fall into two

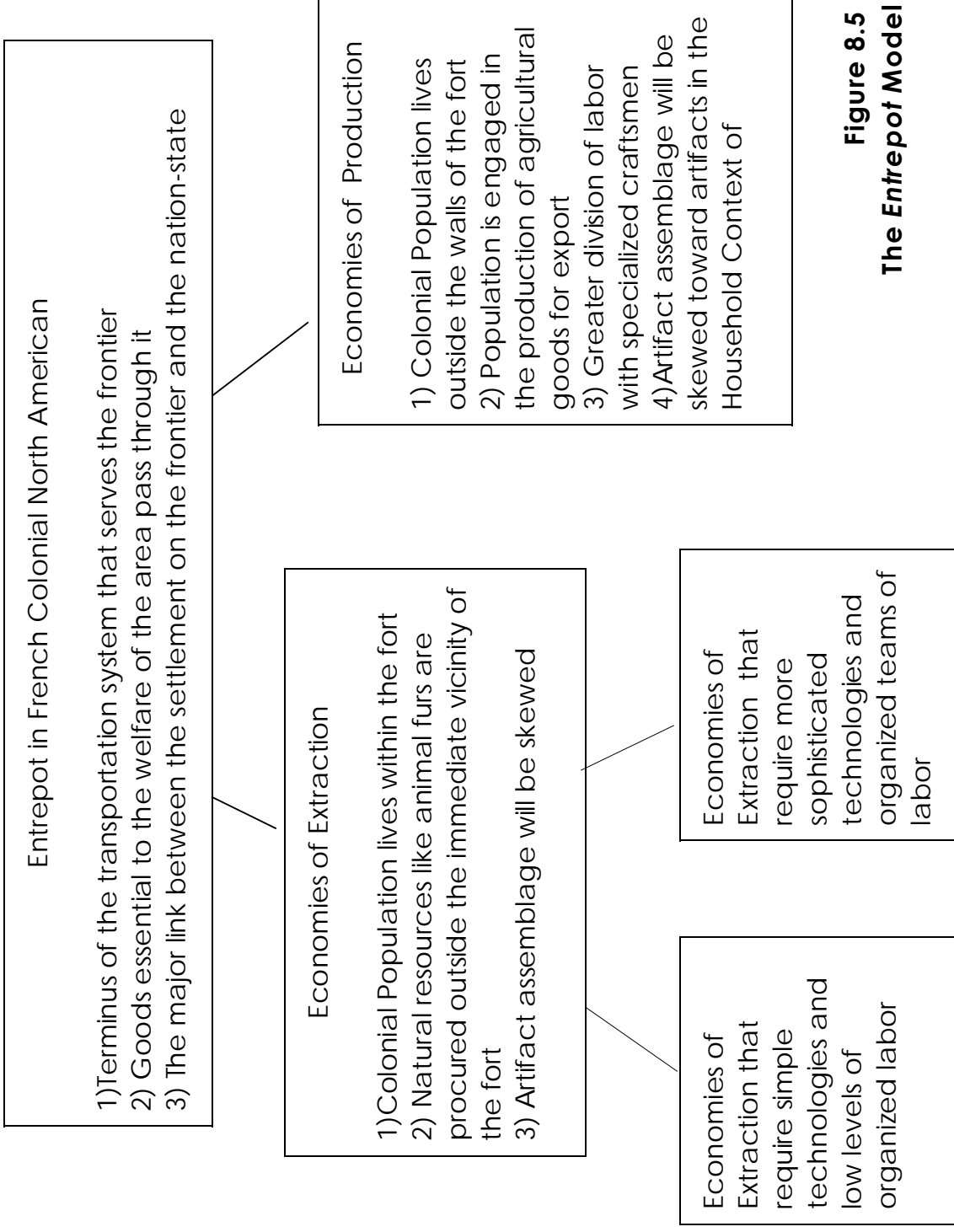


Figure 8.5
The *Entrepot* Model

basic categories: those engaged in economies of extraction and those engaged in economies of production. But the data presented here suggest that there are at least two types of sites within economies of extraction. The first are those that require only simple technologies and organization of labor. The second requires more sophisticated technologies and teams of organized labor.

The model presented here better fits the archaeological data than the hierarchical model. But more importantly it facilitates our understanding of a sophisticated economy. The colonial economy of French North America was not simple and static but flexible to the needs of the empire, responsive to the available resources, and dynamic in its ability to serve the needs of a growing world economy.

CHAPTER NINE

SUMMARY AND CONCLUSIONS

I decided to entitle this thesis, "Beyond Fur Trade" for two reasons. First, the history of colonial activity in North America by the French has been written by historians, geographers, and anthropologists to suggest that the trade and procurement of beaver pelts and other furs were the *raison d'être* for their presence. I have insisted here and even earlier (Keene 1991) that close examination of the documentary evidence suggests otherwise.

Second, we can credit much of this perspective to scholars, both faculty and graduate students, working over the last century in history, geography, and anthropology at the University of Wisconsin, Madison. To all of them I owe a debt of gratitude. There is no greater place to study this area than at an institution whose history is tied to examining the history of the fur trade.

The genesis of this study came from early work on excavations at

Fort de Chartres. Organization and examination of the artifacts recovered suggested that the collection at Fort de Chartres differed from those at other French outposts - particularly from Forts Michilimackinac and Ouiatenon. I embarked on this study to assess and explain differences in the artifact assemblages recovered from these sites.

To that end this study has demonstrated that the collection at Fort de Chartres differs from those at Forts Michilimackinac and Ouiatenon not only in frequency, but also in kind. That is, many of the artifacts at Fort de Chartres belong to classes not represented at the other two forts and vice versa. The difference in construction techniques between the forts was also highlighted with an extensive discussion of eighteenth-century engineering principles as they apply to defensive structures. Fort de Chartres was built of stone and required engineering and a considerable amount of skilled labor. Skills and resources needed to procure materials and undertake such a construction project required the presence of a small colonial settlement. Forts Ouiatenon and Michilimackinac were made of cut timber. This required only the forced

labor of soldiers.

It is not enough, however, simply to demonstrate variation. The real and foremost goal of this study was to develop a model of eighteenth- century French colonial economics that would explain the variation observed in the artifact and architectural record at these and other French Colonial settlements. To that end, I have presented here a model that focuses on frontier outposts and settlements as part of a system of *entrepots*. The *entrepot* provided the major link between the colonial area and the nation state or colonizing power. To define it another way, we could call it a central place in the colonial geography.

Though all *entrepots* served this general function, there was considerable variation in their specific functions. This study has demonstrated that there are essentially two types of *entrepots*. The first, represented by Forts Michilimackinac and Ouiatenon, operated in local **economies of extraction**. These *entrepots* were the centers of local economies where natural resources like beaver belts or cod were gathered or extracted from the environment. The second type of

entrepot, represented by Fort de Chartres, functioned in **economies of production**. These *entrepots* were the centers of local economies where domesticated agricultural goods like wheat and pork were produced.

By expanding our sample of sites beyond Forts de Chartres, Michilimackinac and Ouiatenon, I demonstrated that there is significant variation between *entrepots* in **economies of extraction**. Some economies required simple technologies and low levels of organized labor, whereas others required more complex technologies and organized teams of labor.

The specific function served by an *entrepot* influenced site settlement patterns. In this study I presented settlement information for a number of eighteenth-century colonial sites. *Entrepots* that functioned in an economy of extraction exhibit a settlement pattern in which the local inhabitants took up residence within the walls and confines of the fort or fortified village. Those that functioned in an economy of production exhibit a pattern in which the local population

lived in a series of villages surrounding the fortified place.

The fort or fortified village did not simply serve a military function in this *entrepot* system. In both types of local economies the fort functioned as a central administrative center - as much symbolic of the presence of a colonial power as functional for the redistribution of goods. The case of Fort de Chartres reinforces this point. Though constructed of local limestone, this fort would not have withstood cannon fire. Clearly, the symbolic and economic function of the structure was far more important than its military function.

It is instructive that these conclusions are the result of archaeological investigations. Historians rely almost exclusively on documentary evidence in their pursuit of understanding the past. Often the information in documents is biased as pointed out by Deetz (1996: 259). What is more important, from the point of view of the anthropologist, is that documents are produced by individuals living in a certain culture who are often unaware of the cultural structures which govern their ideas and behaviors.

Material culture does not lie. When we view documents as artifacts - simply another type of material remains - we approach them more critically and use the information contained in concert with other categories of material remains. There is no better illustration of this than in Deetz's discussion on the relationship between the change in tableware in colonial American and the change in ideology concerning the role of the individual in society (1977:158; 1996:87), and in Ivor Noel Hume's (1982) study of Martin's Hundred.

In this study, I have demonstrated that data generated by materials recovered during archaeological investigations can assist historians in understanding the written documents at their disposal. Documentary evidence for the fur trade is rather abundant. There may be many reasons for this. It brought Europeans in direct personal and economic contact with indigenous populations and it opened up opportunities for religious proselytization. These activities were more conducive to reporting information about a new land to the mother country than were the less exotic agricultural activities of colonial life.

Until I (Keene 1992) pointed out to various historians that archaeological data suggested that fur trade was not the *raison d'etre* for colonial settlement of the Illinois Country, no one questioned the assumption. With this study I am suggesting that all scholars working in this area need to revise their understanding of French Colonial activity in the Americas. By overemphasizing the importance of the fur trade we risk misunderstanding the role politics and economics played in the decline of the French colonial empire in North America. Moreover, we miss completely the emergence of the economic system that dominates the world today.

THE LARGER HISTORICAL CONTEXT

The history of Europe in the seventeenth and eighteenth centuries is a history of nation-states constantly at war with each other over who would control the world. This statement is not as obtuse as it might seem at first. Fort de Chartres along with all its sister settlements existed in order to generate revenue to maintain the armies of the French Crown. The colonies of each European power existed for the same purpose (Ferguson 2001: 51).

As pointed out earlier in this discussion, the policy of the French Monarchy was to control as many aspects of the economy as possible. Hence a bureaucracy was established in which the government set prices and controlled trade and exchange. This economic system is referred to as the mercantile system by historians. The British on the other hand, decided on a much different system. Instead of controlling prices and exchange as a fundamental source of revenue, they focused on a system of taxation. Taxation is an integral feature of a market economy.

Taxation of economic activity by the British in their American colonies lead to a major revolt. The revolutionaries, however, did not dispute the need for taxes. Rather, they took issue with the politics of the tax system. Price fixing and central control of economic exchange lead to the fall of the French colonial empire in North America and, within two decades, the fall of the French monarchy (Ferguson 2001:83).

It is no mistake that English is the *lingua franca* of the world. It is no mistake that the market economy is the world economy. It is no mistake that every discussion concerning the “modernization” of the old Soviet

Union or China involves a discussion of introducing a market economy. But how did Fort de Chartres fit into this larger struggle of political economies? It rests at the twilight of the mercantile system. In many ways it sits at the interface between the modern world economy and the last vestiges of the Feudal economic system.

The commodity that moved the economies of Europe in the eighteenth century was sugar. Sugar brought the French to the Carribean, and the French brought slaves to work the sugar plantations (Stein 1988). Sugar was to the eighteenth century what gold was to the seventeenth. It has been argued that the Spanish dependence on finite sources of metallic wealth in the seventeenth century opened the door for the French and British to develop a new form of wealth in the eighteenth (Mintz 1985: 35).

To protect the sugar production in the Carribean, the French needed a breadbasket in North America. The French needed colonies like the Illinois Country to produce surpluses of agricultural goods to supply developing outposts on the American mainland and feed slaves

and others in the Carribean.

LOOKING TO THE FUTURE

During the course of this investigation a number of research projects both in history and archeology have been published. These will assist future studies in developing a more elegant model of French Colonial activity in the Americas. Besides Carl Ekberg's (1998) book on farming practices among the French colonists in Illinois, Leslie Choquette (1997) examines the migration of French colonists from Europe to Canada and how they developed a unique peasant society. Joseph Peyser has examined the lives of individuals in three volumes. The first, **Letters from New France** (1992), provides us with hitherto unpublished personal correspondences he found in various archives in Canada. In his second volume, **Jacques LeGarduer De Saint-Pierre** (1996), using unpublished letters once again provides us with a documentary biography of eighteenth-century soldier and entrepreneur. In the third and most recent volume, **On the Eve of the Conquest** (1997), Peysers translates a report he uncovered in the archives of the *Seminaire de Saint-Suplice* in Paris. This report outlines the state of the French colonies

in New France.

Though this discussion focused on how the built environment and archaeological record reflected the French vision of a colonial economic system the impact of this vision upon the native inhabitants should not be overlooked. Some notable works that discuss the role of the fur trade in the French foreign policy have been written. Daniel Usner (1992) focuses his discussion on the exchange economy between the French and Indian groups in the lower Mississippi Valley. Though he does not include the Illinois Country in his analysis, much of the method he used could be applied to documentary data available for the settlements around Fort de Chartres.

A second work published in Sweden examines population dynamics between the French and Indians in Illinois. Zitomersky (1994) examines how the French presence altered the settlement pattern among Indians groups. He suggests that the change in structure was the result of the French imposing the colonial economic structure upon the Indians. In the future, it might be exciting to examine the converse -

how the native economy affected the colonial economy.

Fort de Chartres and its surrounding villages are located in one of the largest historic districts listed on the National Register of Historic Places. In addition, the State of Illinois was very active in the 1970s and 80s in purchasing land upon which sat important French and Indian archaeological sites. As a result, the locations of many sites are known and protected. At this time there is no active research program in the district. Most archaeological research is conducted as a result of highway reconstruction and improvement.

Two archaeological studies have been produced as a result of highway reconstruction and improvement. The first was conducted on portions of the French Village of Cahokia (Gums 1988). The second was conducted very recently on the Village of Chartres just outside Fort de Chartres (Gums and Witty 2000). Both of these excellent studies are on small portions of village sites. The test excavations were part of Department of Transportation projects. They constitute the only systematically collected archaeological data from villages in the Illinois

Country. Hopefully, more work in the future will produce sample sizes large enough to begin drawing comparisons between the villages.

I opened this study with some brief comments made during the 1987 annual meetings of the Society for Historical Archaeology. In a critique on the “state of the discipline” most participants bemoaned the fact that archaeological investigation on historic period sites failed to produce any substantive contribution to theory building about our understanding of the past. As I sit here writing the final sentences in this dissertation, the latest volume of the journal **Historical Archaeology** has published a number of essays in response to the lead article by Charles Cleland entitled “Historical Archaeology Adrift? He outlines very briefly the accomplishments in the discipline since its inception in the 1960s, yet still bemoans the focus of research on particular events at the expense of the search for cultural patterns (Cleland 2001: 1) Many of his colleagues challenge his assertion. Examination of that volume demonstrates that the debate still goes on!

This study on the eighteenth-century colonial economy of French

North America as seen from Fort de Chartres in the Illinois Country has taken me more than one decade to complete - a decade in which I hope to have made a contribution that can be considered "substantive" and a contribution to theory building about the past. Moreover, as Judith Tordoff encouraged me to challenge her model, I hope that the one presented here will be challenged and changed as more information is uncovered about the French Colonial Period.

REFERENCES CITED

- Alvord, Clarence W.
1907 *Cahokia Records: 1778-1790. Illinois Historical Collections Volume 2.* Illinois State Historical Library. Springfield.
- 1922 *The Illinois Country 1673-1818.* A.C. McClug & Co., Chicago.
- Alvord, Clarence W., and Clarence Edwin Carter
1915 *The Critical Period: 1763-1765. Illinois Historical Collections Volume 10.* Illinois State Historical Library. Springfield.
- Alvord, Clarence W., and Clarence Edwin Carter
1916 *The New Regime: 1765-1767. Illinois Historical Collections Volume 11.* Illinois State Historical Library. Springfield.
- Balcom, B.A.
1984 *The Cod Fishery of Isle Royale, 1713-58.* Studies in Archaeology, Architecture, and History. Parks Canada. Ottawa.
- Beaudry, Mary C.
1988 *Documentary Archaeology in the New World.* Cambridge University Press, Cambridge.
- Beckwith, H.W.
1903 *Illinois Historical Collections Volume 1.* Illinois State Historical Library. Springfield.
- Beck, Lewis
1823 *A Gazetteer of the State of Illinois and Missouri.* Albany, New York.

Belting, Natalia Maree

- 1948 *Kaskaskia Under the French Regime*. Reprinted 1975, Polyanthos, New Orleans.

Binford, Lewis R.

- 1962 A New Method of Calculating Dates from Kaolin Pipe Stem Samples. *Southeastern Archaeological Conference Newsletter* 9(1):19-21.

- 1977 Historical Archaeology - Is it Historical or Archaeological. In *Historical Archaeology and the Importance of Material Things*, edited by Leland Ferguson, pp.13-22. Special Publication Series, Number 2, The Society for Historical Archaeology.

- 1978 Evolution and Horizon as Revealed in Ceramic Analysis in Historical Archaeology - A Step Toward the Development of Archaeological Science. In *Historical Archaeology: A Guide to Substantive and Theoretical Contributions*, edited by Robert L. Schuyler, pp.246-249. Baywood Publishing Co. Inc., Farmingdale, New York.

Brain, Jeffrey P.

- 1979 *Tunica Treasure*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Volume 71, Cambridge, Massachusetts.

Brainerd, George W.

- 1951 The Place of Chronological Ordering in Archaeological Analysis. *American Antiquity* 16(4): 301- 313.

Brown, Margaret Kimball

- 1971 Glass from Fort Michilimackinac: A Classification for Eighteenth Century Glass. *The Michigan Archaeologist* 17(3-4).

- 1973 *Cultural Transformation among the Illinois: The Application of a System Model to Archeological and Ethnohistorical Data*. Unpublished Ph.D. Dissertation, Michigan State University, Lansing.
- 1975 Preliminary Investigations at Fort de Chartres. *The Conference on Historic Site Archaeology Papers* 1973. Vol 8:94-107.
- 1976 *The 1974 Fort de Chartres Excavation Project*. University Museum, Southern Illinois University at Carbondale, Archaeological Service Report No. 49. Carbondale.
- Brown, M. K., and L. Dean
 1977 *The Village of Chartres in Colonial Illinois 1720-1765*. Polyanthos, New Orleans.
- Carter, Clarence E.
 1908 Documents Relating to the Occupation of the Illinois Country by the British. *Transactions of the Illinois State Historical Society for the Year 1907*.
- Casagrande, J. B., S. I. Thompson, and P. D. Young
 1964 Colonization as a Research Frontier: The Ecuadorian Case. In *Process and Pattern in Culture*, edited by Robert A. Manners. Aldine Publishing Company, Chicago.
- Cahill, Thomas
 1995 *How the Irish Saved Civilization*. Doubleday, New York.
- Carroon, Robert G.
 1984 *Broadswords and Bayonets: Journals of Captain Thomas Sterling*. Society of Colonial Wars in the State of Illinois, Chicago.

- Choquette, Leslie
1997 *Frenchmen into Peasants: Modernity and Tradition in the Peopling of French Canada*. Harvard University Press. Cambridge.
- Clark, A.H.
1968 *Acadia: The Geography of Early Nova Scotia to 1760*. University of Wisconsin Press, Madison.
- Cleland, Charles E.
1988 Questions of Substance, Questions that Count. *Historic Archaeology* 22(1):13-17.

2001 Historical Archaeology Adrift? *Historical Archaeology* 35(2): 1-8.
- Cleland, Charles E., and James E. Fitting
1978 The Crisis of Identity: Theory in Historic Sites Archaeology. In *Historical Archaeology: A Guide to Substantive and Theoretical Contributions*, edited by Robert L. Schuyler, pp.242-245. Baywood Publishing Co. Inc., Farmingdale, New York.
- Continental Congress
1788 *Journal of the Continental Congress*. National Archives.
- Cronon, William
1983 *Changes in the Land: Indians, Colonists, and the Ecology of New England*. Hill and Wang, New York.
- Deagan, Kathleen
1982 Avenues of Inquiry in Historical Archaeology. In *Advances in Archaeological Method and Theory*, Vol.5, edited by Michael B. Schiffer, pp.151-177. Academic Press, New York.

1983 *Spanish St. Augustine: The Archaeology of a Colonial*

Creole Community. Academic Press, New York.

- Deetz, James
1977 *In Small Things Forgotten: The Archaeology of Early American Life*. Anchor Press/Doubleday, Garden City, New York.
- 1996 *In Small Things Forgotten: The Archaeology of Early American Life*. Revised. Anchor/Doubleday, New York.
- Downer, Alan S.
1980 Photo Reveals Probable Location of First Fort de Chartres. *Historic Illinois* 3(2):11.
- Duffy, Christopher
1975 *Fire and Stone: The Science of Fortress Warfare 1660-1860*. Hippocrene Books, New York.
- 1979 *Siege Warfare: The Fortress in the Early Modern World 1494-1660*. Routledge and Kegan Paul. London.
- 1985 *Siege Warfare: The Fortress in the Age of Vauban and Frederick the Great, 1660-1789*. Routledge and Kegan Paul. London.
- Duncan, Otis Dudley
1958 The Measurement of Population Distribution. *Population Studies* 11:27-45.
- Eccles, W.J.
1969 *The Canadian Frontier, 1534-1760*. Holt, Rinehart, and Winston, New York.
- 1972 *France in America*. Harper and Row, New York.
- Ekberg, Carl J.
1985 *Colonial Ste. Genevieve: An Adventure on the Mississippi Frontier*. Patrice Press, Gerald, Missouri.

- 1998 *French Roots in the Illinois Country: The Mississippi Frontier in Colonial Times.* University of Illinois Press, Urbana.
- Encyclopaedia Britannica
1770 *Fortifications.* Volume 2:617-624. Edinburgh.
- Ferguson, Niall
2001 *The Cash Nexus: Money and Power in the Modern World, 1700-2000.* Basic Books, New York.
- Fry, Bruce W.
1984 "The Appearance of Strength" *The Fortifications of Louisbourg.* Two Volumes. Studies in Archaeology, Architecture, and History. Parks Canada, Ottawa.
- Gates, Paul Wallace
1931 The Disposal of the Public Domain in Illinois, 1841 - 1856. *Journal of Economics and Business History* 3(2):216-240.
- Grimm, Jacob L.
1970 *Archaeological Investigations of Fort Ligonier: 1960-1965.* Annals of the Carnegie Museum No. 42. Pittsburg.
- Grob, Gerald N., and George Athan Billias
1982 *Interpretations of American History: Patterns and Perspectives.* Volume II. The Free Press. New York.
- Gums, Bonnie L.
1988 *Archaeology at French Colonial Cahokia.* Studies in Illinois Archaeology No. 3. Illinois Historic Preservation Agency, Springfield.
- Gums, Bonnie L., and Charles O. Witty
2000 A Glimpse of Village Life at Nouvelle Chartres. *Illinois*

Archaeology 12 (1&2): 125-160.

- Hale, J. R.
1965 The Early Development of the Bastion: An Italian Chronology: 1450-1534. In *Europe in the Late Middle Ages*, edited by J.R. Hale, J.R.L. Highfield, and B. Smalley, pp.466-494. Northwestern University Press, Evanston.
- Hamilton, Issac
1772 Letter to General Gage. August 8. *Gage Papers American Series* Volume 113. William Clemens Library. University of Michigan. Ann Arbor.
- Hamilton, T.M.
1976 *Firearms on the Frontier: Guns at Fort Michilimackinac 1715-1781*. Reports in Mackinac History and Archaeology No. 5. Mackinac Island State Park Commission. Mackinac Michigan.
- Harrington, Jean C.
1954 Dating Stem Fragments of 17th and 18th Century Clay Tobacco Pipes. *Archaeological Society of Virginia, Quarterly Bulliten* 9(1):10-14.
- 1978 Archaeology as an Auxiliary Science. In *Historical Archaeology: A guide to Substantive and Theoretical Contributions*, edited by Robert L. Schuyler, pp.3-7. Baywood Publishing Company, Inc., Farmingdale, New York.
- Harris, Donald A., and Jerry J. Nielson
1972 *Archaeological Salvage Investigations at the Site of the French Fort Conde, Mobile, Alabama*. Report submitted to the Alabama Highway Department by the Department of Anthropology, University of Alabama.

- Harris, Jane E.
1979 *Eighteenth-Century French Blue-Green Bottles from the Fortress of Louisbourg, Nova Scotia*. History and Archaeology No. 29. Parks Canada, Ottawa.
- Harris, R. Cole
1987 *Historical Atlas of Canada, Volume I*. University of Toronto Press, Toronto.
- Hawke, David
1985 *The Colonial Experience*. Macmillan Publ. Co., New York.
- Hill, S.C.
1903 *Three Frenchmen in Bengal or the Commercial Ruins of the French Settlement of 1757*. Longmans, Green, and Co., London.
- Hume, Ivor Noel
1970 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.
- 1982 *Martin's Hundred: The Discovery of a Lost Colonial Virginia Settlement*. Dell Publishing Company, New York
- Innis, H. A.
1956 *The Fur Trade in Canada: An Introduction to Canadian Economic History*. University of Toronto Press, Toronto.
- Innes, Stephen
1995 *Creating the Commonwealth: The Economic Culture of Puritan New England*. W.W. Norton and Company, New York.
- Jelks, Edward B., Carl J. Eckberg and Terrance J. Martin
1989 *Archaeological Explorations at the Laurens Site*:

Probable Location of Fort de Chartres I. Studies in Illinois Archaeology No.5, Illinois Historic Preservation Agency, Springfield.

Jones, Olive

1971

Glass Bottle Push-Ups and Pontil Marks. *Historical Archaeology* 5:62-73.

Keene, David

1988

Archaeological Excavations at Fort de Chartres 1985 - 1987. Report submitted to the Illinois Historic Preservation Agency.

1991

Fort de Chartres: Archaeology in the Illinois County. In *French Colonial Archaeology*, edited by John Walthall, pp. 29-41. University of Illinois Press, Urbana.

Leone, Mark P., and Parker B. Potter, Jr. (editors)

1999

Historical Archaeologies of Capitalism. Kluwer Academic/Plenum Publishers, New York.

Lightfoot, Kent G.

1995

Culture Contact Studies: Refining the Relationship between Prehistoric and Historical Archaeology. *American Antiquity* 60:199-217.

Lindsay, Charles S.

1975

Lime Preparation at 18th Century Louisbourg. Canadian Historic Sites: Occasional Papers in Archaeology and History - No.12. Parks Canada, Ottawa.

MacDonald, William (editor)

1910

Selected Charters and Other Documents Illustrative of American History 1606-1775. New York.

McLennan, John Stewart

1918

Louisbourg: From Its Foundation to Its Fall. The Book

Room Limited, Halifax, Nova Scotia.

- McNally, Paul
1979 *French Table Glass from the Fortress of Louisbourg, Nova Scotia*. History and Archaeology No. 29. Park Canada, Ottawa.
- McNeill, William
1982 *The Pursuit of Power: Technology, Armed Force, and Society Since A.D. 1000*. University of Chicago Press, Chicago.
- McWilliams, Tennant S.
1981 Pierre LeMoyne d'Iberville and the Competition for Empire. In *Iberville's Gulf Journals*, translated and edited by R.G. McWilliams, pp.1-16. University of Alabama Press, Alabama.
- Mainfort, Robert C., Jr.
1979 *Indian Social Dynamics in the Period of European Contact*. Publications of The Museum, Michigan State University, Anthropological Series, vol. 1, no. 4. East Lansing.
- Martin, Patrick Edward
1985 *The Mill Creek Site and Pattern Recognition in Historical Archaeology*. Archaeological Completion Report Series, No. 10. Mackinac Island State Park Commission, Mackinac Island, Michigan.
- Martin, Terrance Joseph
1986 *A Faunal Analysis of Fort Quiatenon, An Eighteenth Century Trading Post in the Wabash Valley of Indiana*. Unpublished Ph.D. dissertation, Michigan State University, Lansing.
- Martin, Terrance, and Carol Masulis
1988 Report on Animal Remains From Fort de Chartres. In

Archaeological Excavations at Fort de Chartres 1985-1987, by David Keene. Report submitted to the Illinois Historic Preservation Agency.

Mason, Edward G.

1881 *Old Fort de Chartres*. Fergus Historical Series No. 12, pp. 23-48. Fergus Publishing Co., Chicago.

Mereness, N. D.

1916 *Travels in the American Colonies*. Macmillan Company, New York.

Miller, J. Jefferson, and Lyle M. Stone

1970 *Eighteenth-Century Ceramics From Fort Michilimackinac: A Study in Historic Archaeology*. Smithsonian Institution Press, Washington, D.C.

Mintz, Sidney W.

1985 *Sweetness and Power: The Place of Sugar in Modern History*. Penguin Books, London.

Morgan, George

1788 *Petition. Papers of the Continental Congress*. Volume 6. Number 40.

Muller, John

1746 *A Treatise Containing the Elementary Part of Fortification, Regular and Irregular*. Reprinted in 1968 by the Museum Restoration Service, Ottawa.

Noble, Vergil E.

1983 *Functional Classification and Intra-Site Analysis in Historical Archaeology: A Case Study From Fort Ouiatenon*. Unpublished Ph.D. dissertation, Michigan State University, Lansing.

1997 *Eighteenth Century Ceramics from Fort de Chartres III. Illinois Archaeology 9: 36-78*.

Noel Hume, Ivor

- 1964 *Archaeology: Handmaiden to History. The North Carolina Historical Review* 41(2):215-225.
- 1968 *Historical Archaeology*. W.W. Norton & Co. Inc., New York.
- 1982 *Martin's Hundred: The Discovery of a Lost Colonial Virginia Settlement*. Dell Publishing Co. Inc., New York.

O'Callaghan, E.B.

- 1855 *Documents Relative to the Colonial History of the State of New York, Volume 9*. Weed, Parsons and Company. Albany.
- 1858 *Documents Relative to the Colonial History of the State of New York, Volume 10*. Weed, Parsons and Company. Albany.

Orser, Charles E.

- 1976 *The 1975 Season of Archaeological Investigations at Fort de Chartres, Randolph County, Illinois*. Southern Illinois Studies No. 16. Southern Illinois University Museum, Carbondale.

Orser, Charles E. and Theodore J. Karamanski

- 1977 *Preliminary Archaeological Research at Fort Kaskaskia, Randolph County, Illinois*. Southern Illinois Studies No. 17. Southern Illinois University Museum, Carbondale.

Palm, Mary Borgias

- 1933 *The Jesuit Missions of the Illinois Country 1673-1763*. St. Louis University, St. Louis.

Pease, T. C. and E. Jenison

- 1940 *Illinois on the Eve of the Seven Years' War 1747-1755*.

Collections of the Illinois State Historical Library,
Volume 29, Illinois State Historical Library, Springfield.

- Perkins, Edwin J.
1988 *The Economy of Colonial America*. Columbia University Press, New York.
- Peyser, Joseph L.
1992 *Letters from New France: The Upper Country 1686-1783*. University of Illinois Press. Urbana.

1996 *Jacques LeGardeur De Saint-Pierre*. Michigan State University Press. East Lansing.

1997 *On the Eve of Conquest*. Michigan State University Press. East Lansing.
- Pittman, Philip
1765 Letter to General Gage. December 17. *Gage Papers* Volume 46. William Clemens Library. University of Michigan. Ann Arbor.

1770 *The Present State of the European Settlements on the Mississippi*. A Facsimile Edition with Introduction and Notes by John Francis McDermott, 1977. Memphis
- Pollak, Martha D.
1991 *Military Architecture, Cartography and the Representation of the Early Modern European City*. The Newberry Library, Chicago.
- Price, Anna
1980 French Outpost on the Mississippi. *Historic Illinois* 3(1):1-4.
- Quimby, George Irving
1966 *Indian Culture and European Trade Goods: The*

Archaeology of the Historic Period in the Western Great Lakes Region. The University of Wisconsin Press, Madison.

Reynolds, John

1852

Pioneer History of Illinois. Belleville.

Robinson, W.S.

1951

A Method for Chronologically Ordering Archaeological Deposits. *American Antiquity* 16(4): 293-301.

Rowland, D., and A.G. Sanders

1932

Mississippi Provincial Archives 1704-1743: French Dominion. Press of the Mississippi Department of Archives and History, Jackson.

Schiffer, Michael B.

1972

Archaeological Context and Systemic Context. *American Antiquity* 37 (2):156-165.

1976

Behavioral Archeology. Academic Press, New York.

Schuyler, Robert L.

1972

Historical and Historic Sites Archaeology as Anthropology: Basic Definitions and Relationships. In *Contemporary Archaeology*, edited by Mark Leone, pp. 118-124. Southern Illinois University Press, Carbondale.

1978

Historical Archaeology: A Guide to Substantive and Theoretical Contributions. Baywood Publishing Company, Inc., Farmingdale, New York.

Shryock, Henry, and Jacob Siegel

1976

The Methods and Materials of Demography. Academic Press. New York.

- Smith, Lawson
1988 Geomorphological Investigation of the Fort de Chartres Site. In *Archaeological Excavations at Fort de Chartres 1985-1987*, by David Keene, Appendix B. Report submitted to the Illinois Historic Preservation Agency.
- South, Stanley
1977a *Method and Theory in Historical Archaeology*. Academic Press, New York.
- 1977b *Research Strategies in Historical Archaeology*. Academic Press, New York.
- 1978 Pattern Recognition in Historical Archaeology. *American Antiquity* 43(2):223-230.
- 1988 Whither Pattern? *Historical Archaeology* 22(1):25-28.
- Sprague, Roderick
1981 A Functional Classification for Artifacts from 19th and 20th Century Historical Sites. *North American Archaeologist* 2(3):251-260.
- Stein, Robert Louis
1980 The French Sugar Business in the Eighteenth Century: A Quantitative Study. *Business History* 22: 3-17.
- 1983 The State of French Colonial Commerce on the Eve of the Revolution. *Journal of Economic History* 12: 105-117
- 1988 The French Sugar Business in the Eighteenth Century. Louisiana State University Press, Baton Rouge.
- Sterling, Thomas
1765 Letter to General Gage. October 18. In *Transactions*

fo the Illinois State Historical Society for the year 1907, pp. 203-221. Illinois State Historical Society, Springfield.

Stoddard, Amos
1812

Sketches, Historical and Descriptive of Louisiana.
Mathew Carey, Philadelphia.

Stone, Lyle M.
1974

Fort Michilimackinac 1715-1781: An Archaeological Perspective on the Revolutionary Frontier.
Publications of the Museum, Michigan State University, East Lansing.

Surrey, Nancy M. Miller
1916

The Commerce of Louisiana During the French Regime 1699-1763. Columbia University, New York.

Thwaites, Reuben Gold
1908

Collections of the State Historical Society of Wisconsin. Volume 18. The State Historical Society of Wisconsin, Madison.

Tordoff, Judith Dunn
1983

An Archaeological Perspective on the Organization of the Fur Trade in Eighteenth Century New France.
Unpublished Ph.D. Dissertation, Michigan State University, Lansing.

Usner, Daniel H.
1992

Indians, Settlers, and Slaves in a Frontier Exchange Economy. The University of North Carolina Press. Chapel Hill.

Vauban, Sebastian Le Prestre de
1740

A Manual of Siegecraft and Fortification. Translated by George A. Rothrock, 1968. University of Michigan Press, Ann Arbor.

- Walker, Iain C.
1971 *An Archaeological Study of Clay Pipes from the King's Bastion, Fortress of Louisbourg*. Canadian Historic Sites 2:55-122. Ottawa.
- Wallerstein, Immanuel
1974 *The Modern World System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. Academic Press, New York.
1980 *The Modern World System II: Merchantilism and the Consolidation of the European World-Economy, 1600-1750*. Academic Press, New York.
- Weymouth, John W., and William I. Woods
1984 Combined Magnetic and Chemical Surveys of Forts Kaskaskia and de Chartres I, Illinois. *Historic Archaeology* 18(2):20-37.
- Wild, John Casper
1842 *The Valley of the Mississippi; Illustrated in a Series of Views*. Saint Louis.
- White, William P., Sissel Johannessen, Paula G. Cross, and Lucretia S. Kelly
1984 Environmental Setting. In *American Bottom Archaeology*, edited by Charles J. Bareis and James W. Porter, pp.15-33. University of Illinois Press, Urbana.
- White, Richard
1991 *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1815*. Cambridge University Press, Cambridge.
- Witthoft, John
1966 A History of Gunflints. *Pennsylvania Archaeologist* 36(1-2):12-49.

- Wolf, Eric R.
1982 *Europe and the People Without History*. University of California Press, Berkeley.
- Woods, William I.
1988 *Soil Chemical Investigations at Five Historic Sites in Illinois*. Illinois Cultural Resources Study No. 4. Illinois Historic Preservation Agency, Springfield.
- Wood, W. Raymond, and Donald Lee Johnson
1978 *A Survey of Disturbance Processes in Archaeological Site Formation*. In *Advances in Archaeological Method and Theory* 1:315-381, Academic Press, New York.
- Yntema, Dwight B.
1933 *Measures of the Inequality in the Personal Distribution of Wealth or Income*. *Journal of the American Statistical Association* 28 (184):423-433.
- Zitomersky, Joseph
1994 *French Americans - Native Americans in Eighteenth-Century French Colonial Louisiana*. Lund University Press, Sweden.