Shaftesbury's Atlantis

Andrew Agha

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SHAFTESBURY’S ATLANTIS

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DEDICATION

I dedicate this work to Mr. Palmer and Crystal B.
ACKNOWLEDGEMENTS

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ABSTRACT

This research posits that seventeenth century natural philosophy as purported by the Royal Society of London had a major impact on the way the First Earl of Shaftesbury directed the settlement of the English colony Carolina. When Carolina was first settled in 1670, the colonists were ordered by Shaftesbury and his Lords Proprietors of Carolina cohort to test experimental exotic crops like cotton, sugarcane, grapes, olive trees, and indigo, but since those crops did not produce exportable surpluses, they have been labeled as failures. Instead, this study recognizes those failures as integral components to the scientific process of experimentation. That process was derived from the concept of English improvement, which in the seventeenth century was the idea and belief that anything could be made better through science, natural philosophy and experimentation; this concept became paradigmatic through the incorporation of the Royal Society. This dissertation identifies Shaftesbury's St Giles Kussoe, his 12,000-acre Carolina estate, as the material manifestation of a Royal Society-influenced laboratory.

This dissertation identifies Locke's labor theory of property as a product of improvement literature, and, as a theory to be tested through St Giles Kussoe in 1674. I argue that Shaftesbury used improvement to modernize enslaved African labor within the laboratory that Locke's theory constructed. The archival and archaeological data suggest that those enslaved Africans became technicians who employed traditional tasks augmented through English improvement and philosophy. Utilizing archaeological sites
at the 1670s town site of Charles Towne and within St Giles Kussoe, I define a materiality of improvement from my interpretations of colonial documents, seventeenth century improvement literature and specific artifacts through a property-oriented historical political ecology theory. I argue that Shaftesbury sought a vineyard at St Giles Kussoe because he purposefully procured enslaved Africans from an Old World wine merchant and North African trader. The realization of Shaftesbury's plan was the materiality of improvement, where the enslaved were coerced to become research technicians trapped within the prison of the plantation laboratory.
"For the several employments and offices of our fellows, we have twelve that sail into foreign countries under the names of other nations (for our own conceal), who bring us the books and abstracts, and patterns of experiments of all other parts. These we call Merchants of Light.

We have three that collect the experiments which are in all books. These we call Depredators.

We have three that collect the experiments of all mechanical arts, and also of liberal sciences, and also of practices which are not brought into arts. These we call Mystery-men.

We have three that try new experiments, such as themselves think good. These we call Pioneers or Miners.

We have three that draw the experiments of the former four into titles and tables, to give the better light for the drawing of observations and axioms out of them. These we call Compilers.

We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man's life and knowledge, as well for works as for plain demonstration of causes, means of natural divinations, and the easy and clear discovery of the virtues and parts of bodies. These we call dowry-men or Benefactors.

Then after diverse meetings and consults of our whole number, to consider the former labors and collections, we have three that take care out of them to direct new experiments, of a higher light, more penetrating into Nature than the former. These we call Lamps.

We have three others that do execute the experiments so directed, and report them. These we call Inoculators.

Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms and aphorisms. These we call Interpreters of Nature."


"Experience is called the Perfecter of Arts, and the most sure and best teacher in any Art: Contemplation and Action are the two legs whereon Arts run steedily and strongly, and the one without the other can but hop, or go lamely: They are the two Eyes wherewith men see Natures secrets clearly, but the one alone discerns but dimly. And hence it follows, that
some who were only Contemplators of nature without experience, and would needs adventure to write, and give instructions touching the Practique part of Planting Fruit-trees, have in many things (as the aforesaid Author sayes) presented us with smoak, instead of the lucide flames of light: They have indeed shewed us a comly and beautiful body, Painted according to Art, but yet lifeless and without a spirit, and have offered us shells and husks instead of kernels.

But now, speculation and action, are as Soul and Body united, which labouring together, work out both Profit and Pleasure, many advantages to our selves and others. Experience (as a Philosopher says) is the Root of Art, and it may well be so called, from which springs a numerous multitude of new Experiments: for from one Root, or single Experiment, (though perhaps a poor and mean one in it self) if throughly weighed with reason and judgment, may arise many rich and rare inventions: And its most true, which the Lord Bacon sayes to this purpose: As through a small hole or cranny, a man may see great Objects; so through small and contemptible instances, men may see great Axioms, singular secrets of nature. Men will labour hard, and a long time in some labours full of hazard and danger, and perhaps unjust too, and all for a little profit; but here, in this employment, men may with a little labour, in a short time, without hazard or danger, and that justly, obtain great and many profits, and those with pleasures superadded."

-Except from "To the Reader." Ralph Austen, A TREATISE OF FRUIT-TREES, SHEWING The manner of Planting, Grafting, Pruning and ordering of them in all respects, according to Rules of Experience, 1657.

"All our Artificers are designed, and appropriated, to unlock all the Repositories of Nature, To draw out her most concealed Operations and Rarities, To produce them with their best Advantages, and in their fairest Ornaments, for all good occasions."

# TABLE OF CONTENTS

Dedication ............................................................................................................................... iii

Acknowledgements ................................................................................................................ iv

Abstract ...................................................................................................................................... v

Preface ......................................................................................................................................... vii

List of Tables ............................................................................................................................... x

List of Figures ............................................................................................................................. xi

List of Symbols ........................................................................................................................... xiii

List of Abbreviations .................................................................................................................. xiv

Chapter 1: Introduction ............................................................................................................. 1

Chapter 2: Historical Political Ecology ..................................................................................... 24

Chapter 3: Historic Context for the Materiality of Improvement .............................................. 53

Chapter 4: The Colonial Context of Locke's Property ............................................................... 86

Chapter 5: The Materiality of Locke's Labor Theory of Property ............................................. 113

Chapter 6: St Giles Kussoe: The Laboratory and the Materiality of Locke's Theory .... 157

Chapter 7: A Lot In Common: Archaeology and the Materiality of Improvement .............. 202

Chapter 8: Plantations, Proprietary Plans, Plants and Products ............................................ 253

Chapter 9: Conclusions ............................................................................................................. 310

References Cited ....................................................................................................................... 315

Appendix A: Transcription of Indentured Servant Deposition, St Giles Kussoe, Carolina, 1682 (C 9/96/98). ................................................................................................................. 354
LIST OF TABLES

Table 3.1 Date ranges for land transactions between 1639 and 1649 (McCusker and Menard 2004:296) ................................................................. 85

Table 5.1 A transcription of the May 1674 book list .............................................................. 151

Table 5.2 A bibliographic listing of the entries on the May 1674 book list ................. 152

Table 5.3 The May 1674 book list entries organized by category and order of appearance on the list ......................................................... 154

Table 7.1 Miller site artifacts by percentage .......................................................... 241

Table 7.2 Miller Site and Structure 1 artifacts compared ........................................... 242

Table 7.3 Buildings 1, 2 and 3 in comparison at the Lord Ashley site ..................... 243

Table 8.1 Evidence for tree types at Lord Ashley site compared to historic descriptions of the Ashley River ................................................. 301
LIST OF FIGURES

Figure 5.1 The May 1674 book list organized by topic........................................155

Figure 5.2 A bar graph that sorts individual items on the May 1674
book list by category........................................................................................................156

Figure 6.1 St Giles Kussoe plantation in relation to Charles Towne
and modern Charleston ....................................................................................................196

Figure 6.2 A digital elevation model of St Giles Kussoe plantation
(blue=wetter ground; brown=drier ground) ................................................................197

Figure 6.3 Digital elevation model displaying GIS analysis of historic
wasteland (red=wasteland, 8,302.6 acres). ......................................................................198

Figure 6.4 Digital elevation model of St Giles Kussoe displaying historic
embankments in wasteland ...............................................................................................199

Figure 6.5 A facsimile of the 1716 plat of Wragg Savanna plantation,
formerly St Giles Kussoe plantation (traced by author) .............................................200

Figure 6.6 Map displaying known locations of seventeenth century floating
meadows in relation to Wimborne St Giles (locations from Bettey 1977) ...............201

Figure 7.1 A facsimile of the original 1671 Culpepper plat of Charles
Towne (drawn from original, MPII 13). ........................................................................244

Figure 7.2 A facsimile of 1640s Sudbury, Massachusetts; areas labeled
"General Field", "North Field", "Great River Meadow" and "Cow
Common" were the town commons. (drawn from Labaree 1979). .........................245

Figure 7.3 A plan view drawing of the architectural features associated
with the building at the Miller Site. .............................................................................246

Figure 7.4 A plan view of the block excavation revealing Structure 1 with
analytical units and features in gray.............................................................................247

Figure 7.5 A map showing the HLE crossmends between features and units at
Structure 1; HLE sherd counts by unit are listed (squares at the ends of
colored lines denote a crossmend to a unit). ..............................................................248
Figure 7.6 A plan view drawing of all excavations and landscape at the Lord Ashley site ................................................................. 249

Figure 7.7 A plan view drawing of Building 1 at the Lord Ashley site ................................................................. 250

Figure 7.8 A plan view drawing of Building 2 at the Lord Ashley site ................................................................. 251

Figure 7.9 A plan view drawing of all excavations at Building 3; structural posts are gray ................................................................. 252

Figure 8.1 A facsimile of the 1671 Culpepper plat with phytolith samples (Specimen 1=red, Specimen 2=pink) in relation to Structure 1 (blue) and Crop Garden (green) ............................................................................................................... 302

Figure 8.2 The features analyzed for archaeobotanical remains (dark gray) in relation to Structure 1 ............................................................................................................... 303

Figure 8.3 The features analyzed for archaeobotanical remains (green) and interpreted planting holes (gray) at the Crop Garden ............................................................................................................... 304

Figure 8.4 Two soil profile views of the Haskins Plantation cellar excavation (note prepared clay fill on bottom picture; photos by author) ............................................................................................................... 305

Figure 8.5 A facsimile profile drawing of the Haskins cellar with interpreted soil descriptions (top); three diagrams that illustrate how this cellar may have been created (below, follow left to right) ............................................................................................................... 306

Figure 8.6 Three images of the surface of the Building 2 cellar at the Lord Ashley site; top right image is for scale purposes (note the straight line made by the clay fill against subsoil in the bottom right photo) ............................................................................................................... 307

Figure 8.7 Lord Ashley site plan with locations of buckwheat (blue), Lily family (red), maize (yellow), Solanacea (green), Prunus (orange) and grape (purple) pollen ............................................................................................................... 308

Figure 8.8 Lord Ashley site plan with locations of phytolith samples and evidence of water-loving plants (salt and cord grasses=dark green, cattail=brown, sedge pollen=dark blue, sedge phytolith=light blue, light green=water tupelo) ............................................................................................................... 309
LIST OF SYMBOLS

§  Sign for paragraph.

II  Notation for John Locke’s *Second Treatise on Civil Government* (1689).

£  British pound, currency denomination.
LIST OF ABBREVIATIONS

HBC ........................................................................Hudson's Bay Company

PBOT .......................................................................Paleoethnobotanical

PT ...........................................................................Philosophical Transactions of the Royal Society

RAC .......................................................................Royal Africa Company

SP ...........................................................................The Shaftesbury Papers
CHAPTER 1

INTRODUCTION

Historians paint a grim and linear picture when they write about the first thirty years of the English colony of Carolina. Settled in 1670 on the Atlantic coast between Virginia and Spanish Florida, Carolina was launched by the Lords Proprietors—the eight men chartered by King Charles II to lead, fund and control the colony (Haley 1968; Lesser 1995). The Proprietors, whose "motives were frankly commercial" (Wood 1974:13), were "politicians and men of affairs who sought to make money" through Carolina (Weir 1983:48). During the first years of settlement, Carolina's colonists were engaged in a "struggle for subsistence" while they tested, "without notable success", exotic crops and products like wine, silk and olives for the Proprietors (Wood 1974:24, 27). After "three decades of fumbling" (Land 1969:9), staple production slowly developed after 1700 from the "costly, haphazard, and frequently unsuccessful process of experimentation" (Nash 1992:679). This is the known story of how Carolina began as a colony.

This dissertation is an attempt to change that story and offer an alternative. The historians' words I listed above—struggle, fumbling, haphazard, unsuccessful—imply that the Carolina colonists knew nothing about farming as they worked aimlessly without direction for Proprietary profit. The historiographies that detail Carolina's origins label the colony's period of experimentation as an era of non-success for not just the colonists but the Proprietors, who were also "fumbling" around in a "haphazard" manner as they instructed their colonists to try crops that history has proven were doomed for failure.
Furthermore, the above listed summations lead us to believe that success and profit in the past are the only things worth scholarly attention, which is due to the fact that historians generally see the seventeenth century in colonial America as "bleak and one-dimensional" in contrast to the "more complex, stratified society" of the eighteenth century (Cawley 2004:4).

I argue the opposite. The seventeenth century was actually highly complex, very stratified, multi-dimensional and not bleak due to the "invention", application and growth of English improvement (Slack 2015). A term and concept unique only to England beginning in the sixteenth century (Shannon 2011:178; Slack 2015:4), "improvement" referred specifically to the process of making private property more profitable to raise rents (Friedel 2007; Shannon 2011; Slack 2015). The process of enclosure, or the physical manifestation of a property line as a form of fence, wall, ditch or hedge, created private property and was itself recognized as the initialization of the improvement of land (Blomley 1998, 2007). As the seventeenth century progressed, private property holders grew new experimental cover crops to boost livestock herd sizes; they developed innovative technology for better irrigation; and they worked to propagate new kinds of plants and trees that they hoped would provide more bounty for England than ever before (Allen 1991, 1992; Hoyle 2011; Prothero 1917; Thirsk 1984).

Improvement, however, was more than merely mechanical actions on land that helped individuals increase profits. There were minds during the seventeenth century that thought that improvement, as a process, could do so much more than assist farmers and food markets: it could sponsor untold wealth and strength for the kingdom and create bountiful nourishment for mind, body, spirit and society. After 1660 those minds
coalesced and created the Royal Society of London as the epicenter of the new English science\(^1\) and natural philosophy, both of which sprung from improvement. Improvement was modernized through the Society; as a result, improvement became a paradigm that could influence anything—even a colony.

My dissertation retells Carolina's origins through private property and improvement: concepts that historians, anthropologists and archaeologists have mostly ignored or not utilized in their work on the early colony. My thesis is that early private property in Carolina established colonists' social relations to nature, and improvement was the medium—the materiality—through which the engagements and negotiations between colonists and enclosures can be identified. Private property, enclosure and improvement were enacted, practiced and performed on land through labor, which generated a new, particular form of ecology that reflexively bound slavery and servitude to land.

THE FIRST EARL OF SHAFTESBURY AND JOHN LOCKE

My research focuses on the First Earl of Shaftesbury, Lord Anthony Ashley Cooper (b.1621-d.1683), who was the head of the Lords Proprietors and leader of the Carolina venture. Shaftesbury was an improver who operated through the paradigm of improvement as it was characterized by the Royal Society, and his 12,000-acre private Carolina estate, St Giles Kussoe, was a scientific laboratory\(^2\) designed to experiment with

---

\(^{1}\) Throughout my dissertation, my references to "science", "scientific inquiry" and "experimental science" relate to the practice of the scientific method, hypothesis testing, and the work of natural philosophers in the last half of the seventeenth century. Spurred by Francis Bacon's early seventeenth century work, my usage of the word "science" relates directly to the work performed by Royal Society of London Fellows including Robert Boyle, Isaac Newton, Robert Hooke, Christopher Wren, and Thomas Sydenham.

\(^{2}\) This dissertation also employs the term "laboratory" to refer to the places where seventeenth century scientific methods and theories were tested. Here, "laboratory" is not to be thought of as the more modern, stereotypical sterile room usually filled with
both local and foreign plants, animals, and forms of labor from its launch and settlement in 1674 to its demise just 11 years later in 1685. This dissertation demonstrates that Shaftesbury's colonial estate was not intended to solely be a profitable venture, but rather, an estate designed to be an experimental laboratory to improve colonial labor. Kenneth Olwig (1996:640) makes a statement that defines Shaftesbury's colonial intentions perfectly: “The country estate became a microcosm of the empire, where men of property improved their estates according to the rationality of ‘science.’” Here, "the rationality of 'science'" was the thrust behind Shaftesbury's calling for Carolina to be a colony built upon scientifically improved "country estates" that were to be the new expression of English empire, and he built a colonial laboratory to initiate the social movement.

Shaftesbury did not labor alone on Carolina—with him in his work was John Locke (b.1632-d.1704). I argue that John Locke was an active participant in the planning and implementation of St Giles Kussoe for one main reason: he utilized Shaftesbury's estate as the material, real-world location where his labor theory of property—a theory dependent upon improvement—was tested and verified. Locke’s labor theory of property has been celebrated and identified as the first modern property theory because he made property dependent upon human labor (Aylmer 1980; Blomley 2007:2, 5, 17; Harris 1994; Kennedy 2008:133; Lebovics 1986:570; Lustig 1991:141-142; MacPherson 1978:13; Mooney 1981:138; Tully 1980; Warde 2011:139). In turn, Locke's property theory intrinsically links human labor and improvement together as the basis for private property in land. A property-labor focus reorients the origins of Carolina labor, both enslaved and indentured, through the fusion of modernized property relations and technicians in white lab coats, glass beakers, test tubes, centrifuges, Bunsen burners, petri dishes or highly specialized machinery such as computers and incubators.
improvement. The modernization of labor and property converted Carolina's first private properties into the colony's first true plantations—plantations historically defined by enslaved labor.

Shaftesbury and Locke gained insight from St Giles Kussoe: Locke learned whether or not his theory worked in the real world, and Shaftesbury learned whether or not enslaved Africans could provide specific kinds of labor and skills that he knew Carolina needed in order for the colony to succeed. Because white indentured servants comprised the bulk of the English colonial labor force throughout the seventeenth century, and were original settlers in Carolina and at St Giles Kussoe, they were included in Shaftesbury's plans for labor reform and improvement: African slavery was not yet the preferred, dominant labor force in the 1670s, but by 1700 it was (Wood 1974).

Reading the origins of Carolina's African slavery through Locke's labor theory of property at St Giles Kussoe allows me to see the intersection of Carolina's agricultural origins and estate development alongside that of enslaved Africans as it fell under the umbrella of early scientific inquiry. At St Giles Kussoe, Shaftesbury did not simply own and employ slaves and servants that grew crops and raised livestock to make a profit—he ran scientific experiments on plants, animals and human labor in order to satisfy Locke's property requirements. St Giles Kussoe became the experimental epicenter for Shaftesbury's ecology that utilized Locke's property theory to unify agriculture and livestock, experimentation, science, land, labor and slavery under the English paradigm of improvement. Through his colonial estate, Shaftesbury sought specific enslaved Africans capable of implementing the English improvement and agriculture that Locke's property theory required for validation.
This dissertation is prefaced by three problems: (1) the physical locations that served as England’s first scientific laboratories; (2) the origin and specific influences behind John Locke’s labor theory of property as he defined it in his *Second Treatise on Civil Government* (1689); and (3) the reasons why enslaved Africans were favored over white servants as the primary labor force in Carolina. Each problem is detailed below with an explanation of why each problem creates the 'three-legged stool' that the body of my dissertation rests upon. St Giles Kussoe is where I can begin to solve these problems.

PROBLEM ONE: WHERE WERE THE FIRST ENGLISH LABORATORIES?

The first problem that defines my dissertation project stems from questions asked by social historian Stephen Shapin (1988:373): what and where were the physical and social settings of experimental science in the late seventeenth century? Shapin (1988, 1994) identifies the Royal Society of London as the organizing body for scientific experimentation during the 1660s and especially 1670s, where gentlemen worthy of turning scientific inquiry into truths performed trials on their own, at their own places, because the Society was unable to create their own laboratories. He suggests that “new experimental science was carried on in *existing spaces*, used just as they were or *modified for the purpose*” of scientific investigation (Shapin 1988:377, emphasis mine). Instead of converting the rooms and buildings—the "existing spaces"—at English estates and London houses into laboratories, I posit that the estates in England's colonies provided the perfect locations for testing theories and creating truths through scientific experiments. Shaftesbury and Locke, both Society Fellows, were scientific experimentalists in London and at Shaftesbury's Wimborne St Giles's house countryside estate (Anstey 2002a; Christie 1871:49-52; Dewhurst 1962; Fleming 2007; Haley
the colonial landscape was their third location for scientific experimentation.

Rather than side with the historians who commonly assert that an estate like St Giles Kussoe was created primarily for Shaftesbury's profits (Edgar 1998:82, 131-132; Fagg 1970; Roper 2004:42; Weir 1983:48), I instead take Shapin's cues and identify Shaftesbury's estate as a laboratory designed to test theories of property, labor and agriculture through the scientific process.

PROBLEM TWO: WHAT IS THE ORIGIN OF LOCKE'S THEORY?

The second problem that defines my dissertation lies with precisely when Locke conceived and began working on his labor theory of property, which is outlined in Chapter 5 of his Second Treatise on Civil Government. While Locke scholars agree that most, if not all, of the Second Treatise was most likely written between 1679 and 1682 (Armitage 2004; Goldie 1983; Hinshelwood 2013; Kelly 1977, 1988; Laslett 1960; Menanke 1981; Milton 1995), R.W.K. Hinton (1974) makes a strong case for Locke having written, or at least heavily worked on, the Second Treatise between 1673 and 1675 due to Locke's immersion and work on colonial matters between those years. Hinton's theory has been cited and mentioned, but never challenged or refuted (Goldie 1983:65; Kelly 1977, 1988:281; Menanke 1981:547; Milton 1995:374, 389-390). No textual evidence, such as notes or early drafts, has been uncovered to suggest that Locke started his work on the Second Treatise in the early 1670s. As Geraint Parry (1978:7) explains, "There seems to be no firm way of settling the question [on an earlier draft of the Second Treatise] in the absence of any original manuscript."
Although Locke may not have left an early written manuscript of his *Second Treatise*, I argue that the basis of Locke’s labor theory of property was field tested and verified in Carolina through the planning and settlement of St Giles Kussoe in 1674. St Giles Kussoe was the 'original manuscript,' or at least a sort of working draft, that Locke penned with Shaftesbury on land, not paper.

St Giles Kussoe was the material, real-world laboratory from which Locke collected observations that were required for him to conceptualize, refine and fully define his labor theory of property. In later chapters, I explain how Shaftesbury's planning for St Giles Kussoe, its launch and subsequent first year of operation overlapped with Hinton's (1974) suggested 1673 to 1675 window of opportunity for Locke's work on his theory. Scholars have already pointed out the strong connections between England's colonies—specifically Carolina—and the *Second Treatise* (Armitage 2004; Arneil 1996; Hinshelwood 2014; Wilson 2016). My dissertation provides a context that further connects Locke's theory to Carolina and Shaftesbury.

PROBLEM THREE: WHO WERE THE TECHNICIANS IN THE LABORATORY?

The third and final problem that defines my dissertation is a question asked by historian Peter Wood (1974), the first scholar to critically address the origins and characterization of African slavery in Carolina. He asks: “Were Negro slaves simply the cheapest and most numerous individuals available to a young colony in need of labor? Or were there *variables* involved in determining the composition of the Carolina work force?” (Wood 1974:37, emphasis mine). While some scholarship identifies the labor market and economic factors as the reasons why Africans were favored over white indentured servants in the Caribbean and North American mainland (Beckles 1985;
Beckles and Downes 1985, 1987; Eltis 1993), other studies identify the differences between skilled and unskilled laborers in the decisions planters made concerning who to import for work on their farms (Abramitzky and Braggion 2006; Eltis and Engerman 1992:248; Galenson 1981a:47). Skilled laborers, especially and specifically enslaved Africans, were sought by Shaftesbury for St Giles Kussoe in order to set a new standard for Carolina to follow: a standard built on the improvement and advancement of the labor performed by enslaved Africans and their forced implementation of scientific experimentation in the colony. Scientifically oriented labor, then, was one of the unidentified variables that Peter Wood wondered about when trying to figure out the formulation of Carolina's early work force.

THE ROYAL SOCIETY OF LONDON IN CAROLINA

Shaftesbury's and Locke's positions as Fellows of the Royal Society of London were foundational in their approach to the development of Carolina, and especially St Giles Kussoe. Charles II rechartered Carolina in March 1663. A month later, he rechartered the Royal Society of London and renamed it The Royal Society of London for the Improvement of Natural Knowledge. The 1663 Royal Society charter states that the Society was resolved "to extend not only the boundaries of Empire, but also the very arts and sciences," and its goal was to "encourage philosophical studies, especially those which by actual experiments attempt either to shape out a new philosophy or to perfect the old" (Royal Society of London 1663). Carolina was experimental in form and function not only because of Shaftesbury's and Locke's work on the creation of the colony, but because the king himself pushed the spirit of improvement through the kingdom. By the 1660s, improvement grew into a movement that was applied to all
things English: transportation, laws, economics, material culture, and, as Charles II saw it, government and the expansion of empire (Slack 2015; Spurr 2000). Carolina would be the first experiment in the improvement and modernization of colonialism.

Shaftesbury and Locke were improvers who wove scientific experimentation into the fabric of Carolina's origins. Since the goals of the Royal Society were to expand science and empire simultaneously, I argue that St Giles Kussoe was designed to be a laboratory that would determine whether the sentiment of the Royal Society could be used to settle and develop an English colony. Borrowing from the Society's charter, St Giles Kussoe was a place where "actual experiments" shaped "a new philosophy"—Locke's labor theory of property—and with that new philosophy, a new way to employ colonial labor.

MATERIALITY OF IMPROVEMENT

To identify a colonial estate as a 1670s-era laboratory that tested the origins of Locke's theory in Carolina as well as the social relations between enslaved Africans, indentured servants and private property owners, I utilize materiality theory, which explores the relationship between people and things (Coward and Gamble 2010; Fahlander 2005; Gosden 2005; Hodder 1982, 2012; Holtorf 2013; Olsen et al. 2012). More specifically, materiality explores "the ways things and society co-produce each other" (Hodder 2012:1).

I utilize historical political ecology to understand how ecosystems and society reflexively coproduced each other in the past through manufactured ecologies that created and brought meaning to both property and improvement.

Like property, landscapes are socio-environmentally co-produced. Landscapes represent and demonstrate the fusion of the "physical and the social, local and global,
setting and outcome, and spatiality and materiality" (Silliman 2005:274); landscapes show archaeologists the "permeabilities between humans, objects and places" (Hauser and Hicks 2007:267). Landscapes can be viewed and understood as flat representations like "writings, maps, photographs, paintings, [and] drawings" that can be read "like a book"; however, when physical exploration and tactile immersion, like archaeological practice, of a real-world landscape accompanies the flat representations, one can best identify and interpret the ideological demonstrations embedded within the physical reality of landscape (Tilly and Cameron-Daum 2017:4). I identify those ideological demonstrations as enactments of improvement. If objects provoke people to do things in the past, then other kinds of objects—the tangible markers of property and the material spoils and successes of improvement—provoked them equally, if not more profoundly.

Improvement originated within private property in the past. To develop a materiality of improvement, then, I draw from the 'materiality of property' (Brown 2007), which allows me to archaeologically, geographically and anthropologically identify the socio-material correlations of improvement in the real world. Property contextualized into the study of landscape instigates new ways to utilize archaeological approaches to interpret the use of space as a use of power—the power embedded in property rights—and the construction of a built environment as the materialization of improvement that first created and later further improved that private property.

Simply put, "property matters because it plays a profound role in mediating how people can engage land, with fundamental material implications" (Brown 2007:508). Those implications are the after-effect of property's occurrence: "Now there is a property here, what will you on the outside do about it?" Furthermore, property is dependent upon
rights—while anyone can create a landscape and enjoy it, not all people have access to the rights to create or obtain property. A landscape can be walked through or excavated, as Tilley and Cameron-Daum (2017:5) purport, but people cannot traverse or dig holes in all kinds of property—they can, if the property holder grants permission.

Furthermore, property rights "become materially manifest as particular configurations of land, houses, vegetation, [and] fences" (Brown 2007:5010). The materialities of property "are instrumental in enabling property to work as they help to reproduce and obscure the underlying contours of power" that represent the process of exclusion (Brown 2007:510, emphasis original): while we tend to think property is something that 'one has,' it also means it is something that 'one does not have,' of which 'one does not have access' to. The demarcations of property—enclosures, fences, ditches, hedges—were also markers for improvement: an enclosure kept animals out or in, fences and hedges protected gardens and orchards, ditches drained land more efficiently and moved water to needed areas—all of which could and did increase property value. Therefore, the materiality of improvement imbued property owners with a privilege and ability to exert power over the property that was their land and everything in it and on it, including the people, and, central to this discussion, the labor that was committed, coerced and controlled on the owners' property.

My definition of a materiality of improvement, then, evaluates both archaeological and archival records for evidence of the power that private property has over people, the power that people have over property, and, how improvement philosophy shaped and reshaped the land, labor, and social and political relations between people and property.
This research provides a context to assist in the identification and interpretation of seventeenth century social relations to property and improvement by laborers and property owners. The boundary lines of property were both physical and cognitive: lines of enclosure were markers that physically barred entry and exit to property; those lines were also social delineators that signaled the power, privilege and entitlement that property ownership confers. The lines of enclosure make visible a hierarchy of those who have property, power, control and specific rights and those who do not.

HOW TO IDENTIFY TECHNICIANS IN CAROLINA

Shaftesbury had a laboratory room in his London home. Locke conducted science experiments at Oxford, with and for the Royal Society, and together with Shaftesbury. While historians (Haley 1968; Woolhouse 2007) know that Shaftesbury and Locke performed science, the actual experimenters would have been servants, of whom we know almost nothing about in any social scientific setting because the servants of scientists—the technicians—were made invisible. Shapin (1994:361-362) explains that "technicians are triply invisible" because they "have traditionally been invisible to historians and sociologists of science." One reason for this invisibility is that "the relationship between science and society...is a subject that anthropology (like many other fields) has traditionally ignored" (Dove 2006:44). Technicians are hidden from plain sight because there is barely any archival evidence about them, their scientist-in-charge took all credit for the experiments and results, and they have been invisible "as relevant actors to those persons in control of the workplaces in which scientific knowledge is produced" (Shapin 1994:360).
The laborers in laboratories in the seventeenth century were servants and their masters were the scientists in charge. The job title 'technician' was not used in the seventeenth century; instead, the workers in natural-scientific settings were referred to as laborants or laborators (Shapin 1994:362). Pertinently, labor is the basis of a laboratory. Likewise, labor was the basis of colonial plantations and the master-servant, or, planter-slave, social relation was the foundation for plantation society.

This dissertation assumes that Shaftesbury and Locke converted the classic master-servant social relation in the laboratory—the scientist-technician pairing—into a colonial master-servant relationship that dictated the hierarchy of labor: the tasks, the needs those tasks required, and the laborers for the tasks. Although the master's and servant's jobs differed in regard to the experiment, they both labored on it in differing degrees of physical and mental and exertion. I do not claim that the labor of both elite and servant, or of planter and enslaved in a colonial setting, was equal or in any way relative. However, both entities labored in their own important ways and in relation to a scientific experiment; both master and servant were needed for the experiment.

Shapin (1994:360) also points out that "technicians have been 'not there' in roughly the same sense that servants were, and were supposed to be, 'not there'" as well. Ironically, both servants and slaves were "not there" in the colonies either, so if an enslaved African was made into a technician in a colony, then they were hidden even further than a technician in England. Historical political ecology and the study of early science in Carolina allows for some of the enslaved and indentured laborers in the colony to be identified as scientific technicians trapped within the laboratory estates and properties of their employers and enslavers.
Through my archival and archaeological data, I argue that Shaftesbury created laboratory technicians out of enslaved Africans and indentured servants by forcing them to grow and raise non-native plants and animals through the process of philosophical experimentation. The indentured servants and enslaved Africans at St Giles Kussoe were subjected to the powers of property, improvement and scientific experimentation: powers used to not only coerce the laborers into performing strange tasks, but to place them in a position within the experiment they ran. Prior to their time at either St Giles Kussoe or Charles Towne, indentured and enslaved laborers may have been made familiar with English husbandry techniques, the plants intended for Carolina, and even colonial plantation agriculture based on where they worked before they arrived in Carolina. However, once in Carolina, those laborers were persuaded to practice a different kind of husbandry—an experiment-focused husbandry influenced by Royal Society objectives, recommendations and published methodologies.

Aside from servants, when Africans ran trials for their masters, they themselves were part of a different kind of experiment—an 'observation experiment' run by the managers of St Giles Kussoe as they watched to know whether enslaved Africans could successfully execute certain kinds of scientific methods through their labor. If plants and animals were the subjects of the enslaved technicians' experimental labor, then their labor was the subject of study for those technicians' local superiors. Those superiors were then the subject of observation by their superiors in England: Shaftesbury wanted to know whether his colonial managers were competent enough to execute experiments with enslaved Africans as their technicians, and, whether managers were trustworthy reporters of their observations. In later chapters of my dissertation, I argue that the information
gathered from the outcome of what the enslaved did and how they did it was more valuable than the products and produce of their labor.

I interpret the process of the 'watchers watching the watchers of the laborers running experiments' as a form of covert theft or cultural appropriation: if the enslaved knew how to do something no one knew, their methods could be recorded by their overseers and used elsewhere for the benefit of the overseers, their employers and others like them. This practice is evocative of a fantastic, mythical tale that was the inspiration for the Royal Society of London—an institution that was involved in the collection of data from many kinds of people from inside and outside the English realm. The fantastic story is *The New Atlantis* (1627) written by Sir Francis Bacon, and I identify influences and ties between his story, John Locke and Shaftesbury's own Atlantis: Carolina.

**THE NEW ATLANTIS IN CAROLINIAN CONTEXT**

Scholars continuously credit Francis Bacon as the primary motivator for the formation of the Royal Society (Feingold 1998:172; Friedel 2007:162-166; Garber 2014; Hunter 1981; Merchant 2008; Sprat 1958 [1667]). Bacon's fantastical ideas inspired the people who read him seriously to raise those ideas into material expression. Bacon's ideas, a hybrid of private property, enclosure and improvement, are readily seen in his advice to the Prince of England in his work *Gesta Grayorum* (1594). Here Bacon (1688 [1594]:35) recommends four essential components to the study of philosophy, the second of which is a "spacious, wonderful Garden" that is "to be built about with Rooms, to stable in all rare Beasts, and to cage in all rare Birds; with two Lakes adjoining, the one of fresh Water, and the other of Salt, for like variety of Fishes". Bacon (1688 [1594]:35) connected the enclosure of land—nature—and private property to this garden: "And so
you may have, in a small compass, a Model of Universal Nature made private." The important point Bacon made through this description is the fact that all aspects of nature can be privatized and enclosed, or caged, to obtain nature's true understanding.

After defining this garden, Bacon (1688 [1594]:35) described a "goodly huge Cabinet" that should contain things made by "exquisite Art or Engine", followed by a "still-house so furnished with Mills, Instruments, Furnaces and Vessels". Carolyn Merchant (2008:756) interprets "cabinet" as a museum and "still-house" as a laboratory. When put together, the garden, cabinet and still-house are evocative of what Bacon would later extrapolate as "Salomon's House" on the island of Bensalem, the mythical island nation Bacon crafted through *The New Atlantis*.

In *The New Atlantis*, Salomon's House is described as an "institution of an order, or society...dedicated to the study of the works and creatures of God" (Bacon 1913 [1627]:255). This House also sought "the knowledge of causes, and secret motions of things; and the enlarging of the bounds of human empire, to the effecting of all things possible" (Bacon 1913 [1627]:265). The 1663 Royal Society charter strongly echoes this latter passage, especially the expansion of empire. Salomon's House is recognized as the inspiration or 'blueprint' of the Royal Society (Feingold 1998:172; Friedel 2007:162-166; Garber 2014; Hunter 1981:22, 35; Merchant 2008; Sprat 1958 [1667]). Friedel (2007:165-166) points this out best: "the focus on experiments and instruments in the Royal Society made it resemble Bacon's Salomon's House more than any prior institution, in spirit if not actually in operation." Since I suggest that the Royal Society influenced both Shaftesbury on St Giles Kussoe and Locke on how to compose his labor theory of property so that it could be tested in Shaftesbury's colonial laboratory, the connection
between *The New Atlantis*, the aim of the Society, and the goals of Shaftesbury and Locke are made clear when these three entities coalesce as St Giles Kussoe.

While Bacon's tale may sound fanciful, scholars find direct correlations between *The New Atlantis* and colonialism, modernity and imperialism, as well as the ways the English defined nature (Garber 2014; Hsueh 2008; Kendrick 2004; Spitz 1960; Weinberger 1976; White 1958; Zetterberg 1982). There are parallels between some elements of *The New Atlantis* and Locke's scholarship, his engagement with colonies, and his personal experiences with the Royal Society that involved his own experiments supervised by the chief Society scientist and founding Fellow, Robert Boyle. Locke's work with Boyle is crucial to my claim that St Giles Kussoe was a property designed to be an experimental laboratory: as Anstey (2002a:92) points out, "Locke stands firmly in the Baconian tradition precisely because he was so heavily influenced by Boyle."

In *The New Atlantis*, English travelers sailed west from South America and discovered the island nation of Bensalem. Bensalem's governor told the travelers they just came from "the great Atlantis (that you [the travelers] call America)" (Bacon 1913 [1627]:250). Upon arrival the travelers were placed in the "Stranger's House," which was a place for them to regain health and rest. The Stranger's House was also a place where they were quarantined for several days before they could leave to explore and learn about Bensalem; the strangers were placed under observation (Hsueh 2008:313). Since the Bensalemites sent out the Fellows of Salomon's House to find and bring back "sciences, arts, manufactures, and inventions of all the world" (Bacon 1913 [1627]:256), Hsueh (2008:313) believes that the Bensalemites were extracting, through secret observation, the same kinds of information from the English travelers held in the Stranger's House.
This dissertation argues that the enslaved Africans selected by Shaftesbury were experts already knowledgeable of husbandry and skills that the English were interested in acquiring for themselves: while the enslaved were in St Giles Kussoe, they, too, were in a sort of "Stranger's House," held captive at the mercy of their masters and subjected to observation. Although enslaved, those Africans knew of 'sciences, arts, manufactures, and inventions' from different parts of the world and their English master-managers conducted an observation experiment on the enslaved to capture that information.

Near the end of Bacon's story, the wonders and mysteries of Salomon's House were revealed by the House "father" to one of the English travelers (Bacon 1913 [1627]:265). Within the House was a diverse array of buildings that contained fanciful and nearly impossible inventions and machines that did not exist in the seventeenth century. For example, in one "great and spacious" house, the House Fellows recreated atmospheric phenomena like "snow, hail, rain" and clouds that produced "thunders, lightnings" (Bacon 1913 [1627]:267). Besides these diverse houses were "large and various orchards and gardens" where the Fellows practiced "grafting and inoculating" of "wild-trees and fruit-trees" to make the trees "produceth many effects" with a harvest "greater than their nature" (Bacon 1913 [1627]:267). There were also "enclosures of all sorts, of beasts and birds" that were kept not for their rareness or for simple viewing pleasure, but "for dissections and trials" (Bacon 1913 [1627]:268). These trials were conducted in what Merchant (2008:758) interprets as "laboratories [that] existed for the study, speeding up, and modification of the activities of plants and animals." The various, large, experiment rooms held within Salomon's House suggest a building almost too large to be real or
replicated in the seventeenth century—a 12,000-acre colonial plantation, however, had
more than enough room to make Salomon's House a materialized reality.

While Locke was in France between 1675 and 1679 he kept a journal that contained
numerous notes on various topics (Lough 1953a). Ten scattered entries bear the heading
or title "Atlantis." Scholars agree that the Atlantis entries have a colonial context (De
Atlantis*, the king of Bensalem called America "the great Atlantis" (Bacon 1913
[1672]:250). Locke referred to America several times in his labor theory of property and
to the colonies in his Atlantis notes. America was already Atlantis, the mythical paradise
of Plato's ancient stories—if Atlantis was improved, or made new, then there was a
potential for an ultimate utopian society the size of a colony, or as vast as a continent.

At the end of *The New Atlantis*, the "father" told the Englishman of "several
employments and offices of our fellows" who comprise the core members of Salomon's
House (Bacon 1913 [1627]:273). The nine employments were organized like an assembly
line that employed Fellows to go abroad, take foreign information and bring it back to the
House for compilation. New experiments based on that information were conceived and
tried. Next, those experiments and the foreign information were further compiled for
scrutiny by House Fellows in order to "draw out of them things for use and practice for
man's life and knowledge" (Bacon 1913 [1627]:273). Following these steps, the highest
ranked employments were brought in for further work.

The House father explained that "after diverse meetings and consults of our whole
number, to consider the former labors and collections," which I summarized above, "we
have three [Fellows] that take care out of them to direct new experiments, of a higher
light, more penetrating into Nature than the former. These we call Lamps” (Bacon 1913 [1627]:273-274). Prior to writing *The New Atlantis*, Bacon wrote in the *Gesta Grayorum* (1688 [1594]:34) that if the Prince used his "Spirits in the searching out, inventing and discovering of all whatsoever is hid in secret in the World," then "your Excellency be not as a Lamp that shineth to others...but as the Eye of the World."

Shaftesbury was a "Lamp". The Lamps of Salomon's House took the observations, experiments, theories and discoveries produced by the six employments before them and built upon that collected knowledge to design and 'direct new experiments'—exactly as Shaftesbury did through St Giles Kussoe. He would have been one of the only colonial agents in England at the time who could possibly have assumed the role of a Lamp of Salomon's House. With so much pre-1660s colonial information and experience at his disposal and amplified through the paradigm of the Royal Society, Shaftesbury had the power and right to project that light deep into the empire.

After the Lamps come the "Inoculators", who were to "execute the experiments so directed" by the Lamps and report their findings (Bacon 1913 [1627]:274). I interpret the laborers—the servants, slaves and managers—at St Giles Kussoe as Shaftesbury's Inoculators. As a Lamp, Shaftesbury focused his 'spotlight' on his Inoculators as they conducted experiments under the rubric of scientific improvement. Metaphorically, a bright light would have aided in the surveillance and capture of the laborers' knowledge and skills in a "Stranger's House" setting. Shaftesbury and Locke would have wanted to know if white indentures could execute scientific tests, if enslaved Africans could do the same work, and whether those Africans could perform better than servants. Shaftesbury
would not have stepped into the colonial arena to establish a massive estate unprepared—his Inoculators would surely have been the exact people he needed to execute his plans.

ORGANIZATION OF THE DISSERTATION

Chapter 2 provides the outline of my theoretical perspective, historical political ecology. This theory allowed me to identify the materiality of property and improvement as it was constructed in the seventeenth century out of what the English perceived as raw, untouched nature. In Chapter 3 I point out specific details about seventeenth century English colonialism to identify a materiality of colonial improvement and whether anything else similar to St Giles Kussoe, an estate-sized colonial laboratory, was ever settled in the colonies. In Chapter 4 I define the colonial context of Locke's labor theory of property and connect the theory to the never-realized development of Locke Island on the Carolina coast. In Chapter 5 I define colonial correspondence between England and Carolina and a group of 54 books listed by Locke in May 1674 as the materiality of Locke's property theory. Chapter 6 provides data through a synthesis of landscape archaeology and the May 1674 book list to identify St Giles Kussoe as the materiality of Locke's theory and an English laboratory in Carolina.

In Chapter 7 my dissertation is used as a context to interpret two archaeological sites at 1670s Charles Towne through my materiality of improvement approach. As a result, laborers and property owners of the early town are understood in entirely new ways. Here, archaeological artifacts and architecture are the materiality of improvement that represents the social and physical separations brought about between people because of their spatial relation to the property line that delineated the very first private lots granted to Charles Towne colonists during their first year in Carolina. When my approach is
applied to the two Charles Towne sites, I am able to identify a potential materiality of the commons, which reveals the tangibility of interaction between laborers and enclosed private property from outside the property line. The Charles Towne sites are interpreted against the Lord Ashley site, a settlement within St Giles Kussoe, to further identify Shaftesbury's estate as a laboratory.

Lastly, Chapter 8 provides interpretations of the archaeobotanical plant remains identified from the two previously mentioned sites at Charles Towne along with a third, a portion of a 1670s experimental crop garden. The plant remains are contextualized with the agency of the laborers at the town, the Lords Proprietors botanical plans for Carolina, and the roles of private property and improvement. I close Chapter 8 and my dissertation with interpretations of the labor and laborers at St Giles Kussoe to reveal the origins of the Lord Ashley site as an experimental research station.

My dissertation is a statement on the idea that Carolina was not just the New Atlantis, but more so, Shaftesbury's Atlantis: a place where humanity's mastery of nature would finally be attained through the proper employment of ecological experimentation based in Royal Society principles. That experimentation transformed feudally-oriented English country estates into modern plantations inhabited by enslaved people who were strangers under observation in a strange new land. Shaftesbury and Locke wrote improvement into the framework of the colony, and their grand experiment of St Giles Kussoe was to be proof that Carolina could be a modern colony that would improve the empire.
CHAPTER 2
HISTORICAL POLITICAL ECOLOGY

English improvement was operationalized in Carolina during the 1670s to purposefully improve the three essential building blocks of England's colonies: agriculture, labor and private property. King Charles II saw the Royal Society of London as a funnel that would stream the paradigm of improvement throughout not only England, but also his empire overseas. Shaftesbury and Locke were integral improving laborers who worked to carry out the mission of the king and the Royal Society. St Giles Kussoe was the realization—the materiality—of that mission.

English improvement in the seventeenth century was a set of ideas that had material correlates. Both successful and unsuccessful experiments on land, plants and animals were written down and published for other likeminded private property owners in England who were interested in deriving more out of their properties. The introduction of root crops to help overwinter sheep resulted in larger flocks, which equaled more wool and meat. Experiments, such as grafting, on fruit trees developed hybrid varieties that produced better ciders and liquors. Here, the materiality of improvement is evidenced through books/pamphlets and animal and plant products, which were cognitive and physical products of the ecology that was created by improvers as they enacted improvement on what they defined and considered to be 'nature.'

The purpose of improvement was to alter the natural world to turn nature into something better than it was before (Friedel 2007; Slack 2015). However, what we today
perceive as 'nature' is not what the English perceived as nature in the seventeenth century. Political ecologists have constructed the concepts of First and Second Nature to explain how people, guided through ideologies such as capitalism, alter what they perceive of as nature into something produced and different from its raw original form (Castree 1995; Goldman and Turner 2011:18-19; Greenberg 2006:126; Hartmann 1998:337; Loftus 2009:158-159; Mackenzie 2005:95-97; McCarthy 2008:130; Neumann 2003; Sandilands 1998; Sluyter 2003; Swyngedouw 2003:97). This chapter unravels the political ecological discussion of First/Second nature, how those natures can be identified in the pre-capitalist seventeenth century, and how improvement in that century played a major role in defining how the English perceived, understood and defined nature. Improvement allowed the English to see both the material and conceptual components of nature.

As the practice of improvement became scientific during the mid-seventeenth century, English elites at the forefront of improvement, especially in its practice, began to see clear distinctions between society and nature. Scholars claim that science reveals, to people, the split between society and nature, by which both entities are independent and separate from each other (Hartmann 1998:337; Sluyter 2003:221). Therefore, through historical political ecology I can suggest that improvement provided the first notions that nature and society were different entities, and when improvement became scientific, nature and society were formally severed. Understanding the distinction between nature and society is critical. The creation of St Giles Kussoe was the materiality of Locke's scientifically oriented property theory, and the creation of that estate was the moment First Nature was converted into Second Nature both conceptually and physically for the people involved in that transformation and those who observed it happen from outside the
enclosure. When political and economic power was harnessed, through the free and enslaved labor of improvement, in order to implement improvement on the land to produce scientific facts and profits, St Giles Kussoe was converted from a transplanted English estate in Carolina to a modern plantation defined by slavery.

St Giles Kussoe can be viewed as a fusion of three interwoven materialities of improvement. First, St Giles Kussoe was the materiality of early scientific experimentation efforts to develop improvement in a colonial setting—the proverbial laboratory that Fellows of the Royal Society sought collectively but actualized independently on their own time and at their own expense. Secondly, St Giles Kussoe was the materiality of Locke’s labor theory of property—a theory based and built upon the improvement of land, labor, and private property. Finally, St Giles Kussoe was the materiality of the improvement of enslaved labor, where enslaved Africans were forced to merge their prior experiences of a pre-Carolina Atlantic world together with the purposeful advancement of English improvement to construct a better, more productive property that would create the precedent for a better, more productive colony.

In the subsequent pages, I discuss the role power plays in political ecology scholarship and how power, particularly state power, outlines the rules of private property. I follow that discussion with an outline of the theoretical concepts of First and Second Nature and explain how those concepts have context in the seventeenth century. I explain how the development of English natural philosophy, or science, taught the English how to perceive nature, and how to alter it into something better through improvement, thus creating Second Nature in the process.
POLITICAL ECOLOGY

Political ecology is a theoretical perspective that seeks to illuminate the reflexive interactions between societies and the ecosystems within which those societies worked, derived their needs, and altered for their benefit. This body of theory allows researchers the opportunity to study how human and natural systems merge, and also study the outcome of that union. Political ecologists explore the ways capitalism plays a role in influencing, shaping and changing local ecologies around the world, with particular attention paid to the reflexive human/nature relationships that are the result of political economic engagement (Biersack 2006a, 2006b; Castree 1995; Lansing et al. 2006; Gezon 2006; Gezon and Paulson 2005; Greenberg 2006; Keil et al. 1998; Paulson et al. 2005; Robbins 2010). Besides capitalism, political ecologists also investigate anti- or non-capitalist ecologies (Burke and Shear 2014; Gezon 2017; Johnson 2014; Shear 2014). Such studies utilize political ecology "as a lens for analyzing how people respond to challenging economic conditions" (Gezon 2017:583). Likewise, "non-capitalocentric political ecology" helps scholar-activists move away from capitalist production and exchange to work with societies that do not actually engage with capitalism or live in opposition to and on the fringes of the capitalist world-system (Burke and Shear 2014:129-130).

Capitalist and non-capitalist approaches to human/nature relations influence how political ecologists deal with "First/Third World" issues and their activist solutions to those issues (Brannstrom 2004; Bryant and Bailey 1997; Sandilands 1998; Turner 2003). Here, political ecologists see the detrimental effects of capitalism as the creator and definer of what the "First World" is and who lives within it, and after the "First World" is
defined, that world dictates what the "Third World" is and who inhabits it. Since political ecologists see the effects of political economy on ecology at the local and regional level, they can offer solutions to help communities combat the negative effects of capitalism.

At its core, political ecology generally views how power shapes the entanglement of people and environments (Ahlborg 2018; Biersack 2006a; Gezon and Paulson 2005; Mackenzie 2005; Paulson et al. 2005; Wolf 1972). In the same vein, historical political ecology studies the past to learn how humans altered nature into environments through varying forms of power so that scholars today can better understand the current conditions and positions people hold socially, culturally, politically and economically (Brannstrom 2004; Crossley 2004; Daur et al. 2016; Hvalkof 2006; Hecht 2004; Offen 2004; Stevens 2005; Turner 2003). My version of historical political ecology explains how private property, infused with power, turned nature into pieces and parts through improvement. The process of putting those parts back together was scientific. The place where scientific improvement was used to reassemble nature and turn it industrious through colonialism was St Giles Kussoe.

POWER AND PROPERTY IN POLITICAL ECOLOGY

Property plays a key role in the development of political ecology theory and its utilization. Since my dissertation employs property theory as the benchmark against which my research questions revolve—property as location of improvement and labor—I adopt a property-focused historical political ecology. Eric Wolf's 1972 article "Ownership and Political Ecology," the proverbial starting point of political ecology theory, he establishes the basis of this theoretical perspective within property theory. His definition of political ecology is place-based, where the rules and laws that govern the ownership of
property cast strong influences on people that utilize their environment for long-range ecological strategies of "expansion, intensification, and regulation" (Wolf 1972:201). However, "the dynamics of ownership", or rules of and rights in property "often run counter to these long-range strategies" (Wolf 1972:201). Wolf points out that the "property connection" is not an outcome of ecological processes but is instead a "battleground of contending forces" where property law is utilized to "maintain or restructure the economic, social and political relations of society", or, the power central to the state or those with access to state power (Wolf 1972:202). Greenberg (2006:126-127) builds from Wolf's work on property ownership by pointing out that "the processes through which rights of access, control, and transfer of ownership are organized and contested have profound implications for commoditization."

Wolf (1979:202, emphasis mine) labeled property rules, rights and obligations as "mechanisms which mediate between the pressures emanating from the larger society and the exigencies of the local ecosystem" making it clear that property is the place, nexus or focal point where the relations between humans and nature coalesce. His use of the word "mediate" foreshadows an inherent violence within property, specifically private property, and the ways state power regulates those who have the claim right to a property, and how that power also enables the property holder to restrict access or possession to their property. Violence is identifiable within sixteenth and seventeenth century enclosure movements (Manning 1974; Thirsk 1984a:130, 240; Thirsk and Cooper 1972:107) and the improvement of nature (Merchant 2008; Pesic 2014). If the ownership of property is a battleground (Greenberg 2006:126; Wolf 1972:202) and property rules and rights mediate
between societal and ecosystem pressures, then property is a location of contention between people, nature and state power.

Robb (2010:53) says that "the first and most essential contributions to a contemporary political ecology is common property theory," which involves the engagement of political economic systems' interactions with collectively and traditionally managed environmental systems like fisheries, forests, rangeland and rivers. The study of common property in political ecology looks at the negative effects of both capitalism and governmental institutions on ecosystems and the people who work within them (Osborne 2015; Robbins 2010; Sinha and Herring 1992). The study of common property is important because private property is traditionally positioned against common property rights, as made apparent in political ecology studies of the "Third World" (McCarthy 2002). Put bluntly: the commons are lands that will eventually be made private. Greer (2012:368) identifies the vast commons of America, as defined by Locke, as "the antithesis of property." Therefore, a study of private property cannot be without recognition of the commons. Lastly, a focus on private property through political ecology makes evident the "multiplicity of power relations that are embedded" concretely "within the political economy of property relations" (Heynen et al. 2006:5).

Power allows for property in land to exist. In actuality, property is not a thing or an object but the claim someone has to a thing or object, which is "enforced by society or the state, by custom or conventional law" (MacPherson 1978:3). The state decides the rules and laws of property that govern peoples' rights and claims to property; the state also decides how to punish those who inflict harm to property or attempt property theft (MacPherson 1978; Rose 1994; Sreenivasan 1995). State laws prevent people from
having access to private property without the owner's permission. There are limits to what a private property holder can do with their property because state laws put restrictions on access and use of both land and goods (Robbins 2010:201-202). If a private individual wanted to improve their private property, they had the right to do so, as long as their alterations were within parameters of state acceptance.

History demonstrates that science—at least English science—was born from the improvement of nature within private property (Attie 2011; Drayton 2000; Olwig 1996). In the seventeenth century, private property 'trapped nature' inside of its boundaries, which allowed the property holder the opportunity to employ methods of improvement upon the nature they enclosed and controlled (Attie 2011; Drayton 2000). The process of improvement let people tinker with the natural world to learn how nature worked to make it better; essentially, improvers' work taught them what nature truly was. As the improvement of nature became methodical, predictable, albeit scientific, the resulting science eventually revealed to society at large that nature is "a machine made up of component parts" (Hartmann 1998:337). Science creates the split between society and nature, both through conceptual and physical processes. Past improvers tore nature apart to identify and label nature's components and pieces—a process that taught them how the parts made up the machine.

That machine was housed within the confines of private property. If seventeenth century improvement was the 'method' to how people discovered and began to learn about what comprised the nature around them, then the onset of science, born from improvement, taught people that nature was more than just plants, animals and soil: it was also a stand-alone entity different and apart from society. The private property holder
could also see their property as different and held apart from society: access to their property must be granted to others, any and all people could be denied entry and access to their property, and everything within their property was theirs by right. Therefore, going back to Wolf’s (1972) idea on private property, he asserted correctly that property mediates between society and nature, because science, which came from the improvement of nature within private property, forces a dichotomous split between society and nature. Going further, Brown (2007:508) points out that property "plays a profound role in mediating how people can engage land" with the outcome of that mediation having "fundamental material implications." Historically, state power dictated the rules of property that allowed people to improve nature and create science in private.

Once the state—in this case, England—and especially the social agents that worked for the state, like Shaftesbury and the Proprietors, saw nature as components that could be moved around, ripped apart, reconstituted and made into something never seen before, it harnessed science as power, which allowed the state to assume the role of "socioenvironmental engineer" (Swyngedouw 2003:103-104). The state and its agents then stitched those 'component parts' together to create new, unique, modern private properties and used science as the basis for land acquisition through colonial expansion. In this sense, Shaftesbury was a "socioenvironmental engineer" who utilized improved labor to tear nature apart and reorganize it within the confines of his private estate—the process that created the modern Carolina plantation, which prompted colonial growth.

While scientifically-motivated elites had the power and right to do what they pleased with their land and property, improvement could only partially deter the raw forces of nature. Hurricanes, floods, droughts, and storms of ice and snow were constant reminders
to property developers that they could improve their land to negate the harmful effects of nature but could only lessen, not prevent, nature's wrath. Although property owners wielded power over nature, there were levels of severity in nature's forces that science could not stop.

PROPERTY AS THE COLONIAL MATERIALITY OF IMPROVEMENT

Private property was historically intensified through the process of its binding to, first, English improvement, and second, to the sciences that sprung forth from that improvement. In his ethnography of scientists in a modern laboratory, Bruno Latour (1979:244) defines the laboratory as "an enclosure where previous work is gathered." Although he may not have intended it, his use of the term 'enclosure' is historically accurate, crucial to the origins and practice of English improvement, and evidences the foundation of early modern science as it developed in England. By interpreting the laboratory as an enclosure, I can identify a materiality that evidences these places in the seventeenth century. Private property was first given spatial materiality through enclosure, usually denoted on the landscape as a hedgerow and accompanying ditch (Blomley 2007). Here, Blomley (2007:5) echoes the concept of the machine-of-nature that was housed inside private property by pointing out that the hedgerow "as both a barrier and a sign...was a powerful machine of enclosure." This double machination—the green barricade of the hedge and the 'nature-machine' that improvement created—produced the modern laboratory.

The "previous work" that was gathered into an enclosure can be identified as the information derived from previous experimental ecologies that took place inside other properties and the enclosure/property in question. Latour (1979) studied the processes at
the core of how science creates facts and truth, which in turn shape and mold our concept of reality. While Latour most likely did not intend for his definition of a science lab to be read along the lines in which I read them, his definition and interpretation of a laboratory is important to my interpretation of what a laboratory was in the later seventeenth century—a period of time when there were no formal laboratories in England.

With the threshold of the laboratory closed to the public, the inventions, discoveries and scientific products remain secret and private: science happens 'inside' while non-science happens outside (Shapin 1988:374-375). Latour (1979:244-245) gives weight to this concept by stressing that disorder arises when the enclosure is opened, because anyone can enter the scientific private space and do harm to the discoveries hidden from plain view inside. In the seventeenth century, the walls of the enclosure acted as a form of "organic barbed wire" (Blomley 2007:1) that sealed off private property and barred people from entry through physical and cognitive symbols. Those inside the enclosure utilized power through the property rights granted and guaranteed to them by the state. Those property rights allowed them to do what they pleased with their land, and also do what they wished with their plants and animals. Power gave property owners the ability to turn nature into 'component parts' because they controlled the experimentation process.

Here, power, property rights, improvement, ecology and enclosure combine as a laboratory. Power, materialized as property through improvement and science gave strength to the new facts that experimentation produced within that private space. Shapin's question concerning the physical locations of England's seventeenth century laboratories finds materiality in the colonial setting through this contextualization.
Improvement and the science that sprung from it defined and altered perceptions of nature, which created facts about nature inside of laboratories.

The next section of this chapter is a discussion of how the political ecology-based First and Second nature concepts assist my interpretation of how improvement and science identified and altered First nature into Second nature, and why seeing the seventeenth century through these concepts is important to my identification of St Giles Kussoe as an estate-turned-plantation.

THE PRODUCTION OF NATURE

To contextualize the way an English estate in Carolina was modernized into a plantation, the entanglement of the ways nature has been conceived, constructed, numbered, named, and produced must be picked apart. Francis Bacon was one of the earliest and most concise theorists to define nature and what an altered nature could offer to the English; he "played a key role in the invention of nature" (Bauman and Briggs 2003:19). He worked to convince people that nature could and should bend to human will by believing that encapsulating, or enclosing, nature would let the encloser create a "garden of Eden" that would provide for the study of nature to figure out how it worked (Attie 2011; Bartos 2010; Drayton 2000; Hartmann 1998; Pálsson 2006). By doing this, nature could be experimented on and made into new things—nature could be constructed into whatever a person could conceive, for whatever reason they wanted.

From this, the idea of “produced nature” or “Second Nature” came about (Biersack 2006a; Castree 1995; Smith 2010). On the surface, "nature is generally seen as something that cannot be produced; it is the antithesis of human production" (Smith 2010:49). However, the "production of nature" can be understood or identified as the "material
symptoms of uneven development" (Smith 2010:50). Smith originally devised the "production of nature" idea in 1984, and since his work on this topic, several theorists have engaged and expanded upon the "produced" or "Second" nature concept (Castree 1995; Greenberg 2006:126; Goldman and Turner 2011:18-19; Hartmann 1998:337; Loftus 2009:158-159; Mackenzie 2005:95-97; McCarthy 2008:130; Neumann 2003; Sandilands 1998; Sluyter 2003; Swyngedouw 2003:97). In order to define Second Nature, and how nature can be "produced," it is first necessary to understand First Nature.

The concept of First Nature, which partially stems from Marx’s idea of virginal nature (Biersack 2006a:14), is technically pristine nature untouched by human hands (Castree 1995:19). Once First Nature is transformed through production, it sits in a dichotomous relationship to its now-altered form. This altered form is Second Nature: something better, something produced and something more useful. The invention of Second Nature made it necessary to create its mythological opposite: a form of nature that was untouched and virginal, or what political ecologists call “pristine” nature (Escobar 1999:1; Neumann 2003:245; Sandilands 1998; Sluyter 2003). Sandilands (1998:240, emphasis original) defines "pristine" nature as a form of nature that "is the absence of humanity…the obverse of civilization.” Civilized nature has been changed from pristine or First Nature for human consumption and life in general—it is the nature that people live in and depend upon.

Pristine nature, on the other hand, is a form of nature that sits in opposition to civilized, or Second Nature, yet, it is not truly First Nature either. First Nature holds a latent productive value and can be utilized for human benefit when transformed into Second Nature. However, due to the dichotomous relationship between First and Second
Natures, humans hold on to the hope that pristine nature really is still out there in the world and it can be conserved and saved. Sluyter (2003:223-224) calls this particular line of thinking about First Nature the “pristine myth” because pristine nature can only be known or conceived—believed in—due to the mythos that it once existed in our lives: people see non-pristine nature everywhere around them, and they believe in the idea or dream that once, possibly long ago, there was a kind of nature that was untouched and clean from human interaction.

By identifying and qualifying these three kinds of natures within the context of the seventeenth century, an understanding can be brought about of how these natures were critical to England’s colonial pursuits, especially in Carolina. In order for nature to be productive, it needed to be defined and recognized as untouched, untampered and ready for English alteration. Colonialism augments these definitions in an almost exponential manner due to the way Locke (1960 [1689]) wrote about the State of Nature in his Second Treatise, where he posited Native Americans as proof that America was one of the last true First Natures left on earth.

To people like the Lords Proprietors, America was the 'State of Nature' materialized: an uncultivated, unbound, unimproved, uncivilized wasteland. Locke's work in the Second Treatise provided English colonial overlords with a way to view Native Americans as occupiers of land those natives did not deserve. Natural law was living according to custom and tradition (Allen 1992; Blomley 2007:4; Comninel 2000:28; Hoyle 2011:13-14; Kennedy 2008; McDonagh and Griffin 2016). Natural laws supported a communal use of land, where decisions were made through group consensus. Because “custom” can be seen as “anti-modern” or “backward-looking”, “improvement is seen to
be a process of modernization” (Hoyle 2011:1). Since land needed to be improved, it needed to first be privately owned—civil, not natural laws were required to govern property’s rules and regulations. In England, enclosure was dependent upon voluntary agreement and some form of compensation in line with governmental oversight, while in Locke’s America, enclosure required no one’s permission because Natives had no true—true in English eyes—government (Greer 2012:367-368).

Locke’s labor theory of property essentially identified state power as the administrator of the civil use of land: land unimproved was wasteland that fell under customary rights of use. Since Locke strove to change ’traditional’ English society into a new, modern and improved one (Bauman and Briggs 2003:11), he pitted the natural and civil states of nature against themselves to justify the English capture, settlement and alteration of land in America. Locke’s theory stripped indigenes of their natural right to the land for not improving nature—they did not civilize nature into new, more productive modern forms: they did not convert First into Second Nature. Unaltered, or ”pristine”, nature deserved to be improved through modern methods and those methods were outlined in Locke’s labor theory of property—a theory grounded in modernity.

The inception and creation of completely new private property where it had never existed before, either in physical or cognitive ways, was the dream of both Locke and to a greater degree, Shaftesbury. To have unlimited, pristine nature at Shaftesbury’s and the Lords Proprietors’ disposal, from which enclosed private properties could be built, where nothing remotely similar to English improvement was ever enacted on the land, was surely more dream than reality. Adopting the First/Second Nature concept to understand the magnitude of private property creation in a colony like Carolina materializes the
latent power bound up within the paradigm of post-1660 improvement. St Giles Kussoe, then, was the result of that latent power unleashed through the scientific advancement of improvement in a colonial setting.

LABORATORIES PRODUCING NATURE AND AFTER-NATURE

Locke made America into an unimproved wasteland inhabited by uncivilized nature-bound natives. His redefined theory of property would be the ship within which English modernity sailed, and improvement acted as the vessel's rigging, sails, masts, navigation instruments, rudder, and on colonial shores, anchor. When this vessel landed at Albemarle Point in March 1670, Carolina became the first colony to have English modernity and improvement as its blueprint. Here, with unlimited, unaltered First Nature at their feet, the Lords Proprietors could create the New Atlantis that Bacon (1913 [1627]) wrote about: enclosing nature to recreate the Garden of Eden. I believe Locke's labor theory of property was written within the natural philosophy paradigm because he listed improvement as the proper way to turn land into private property. By the time he conceived his theory, improvement was already an instrument of early English science thanks to the Royal Society's intensification of improvement into a paradigm for England's growth and prosperity (Spurr 2000:117-119). Simply put, the Society turned the acts of improvement into scientific experimentation. Improvement within private properties in the 1670s was therefore a scientific endeavor.

Shaftesbury had been a Royal Society Fellow for 11 years when he launched St Giles Kussoe in 1674. He was the first of the Proprietors to become a Fellow, and he was also the first to take up his rightful 12,000-acre Carolina seigniory. He also had access to Locke's property theory in its infant stages when it was just a theory to be tested in the
real world, and not yet the published theory that educated and informed English
gentlemen what the power of their property truly meant. St Giles Kussoe was to be a
laboratory designed from scratch: pristine First Nature was the canvas; Locke's theory
was the idea or template for the painting; and the scientific, methodical practice of
English improvement was the brush. Scientific improvement was modern at its core,
which meant it was the tool required to civilize the land.

Shaftesbury and Locke did not invent the modern plantation, but St Giles Kussoe
was possibly the proving ground for the new concepts that drove the construction of all
future plantations in Carolina. St Giles Kussoe was a 12,000-acre estate established as a
private enterprise by Shaftesbury, a person of enormous social, political and economic
stature. John Locke, who was heavily involved in Shaftesbury's affairs in England and the
colonies, turned the creation of St Giles Kussoe into a modernizing venture, where
theories were tested and products created from nature's improvement. The knowledge
acquired through experimentation was the most important product that the farm
produced, and it was this knowledge, this "after-effect," that influenced the development
of Carolina's plantations.

The 'after-effect' of what Shaftesbury and Locke accomplished was the creation of
what political ecologists call "after-nature." Alletta Biersack (2006a:4-5) explains how
the post-modern critique of the Structural Marxism that was paired so tightly to the
'political' of political ecology generated reorientations of political ecology theory. For one
of these reorientations, Biersack (2006a:4, emphasis original) draws from Escobar (1999)
as she explains that terms like "second, social or humanized" are paired with 'nature' to
"signify a nature that is the by-product of human conceptualizations, activities, and

40
Escobar’s notion of “after-nature” (Biersack 2006a:4, 14; Berglund 2006:100; Escobar 1995, 1996, 1999; Gezon 2006:11) is the resulting creation from the fallout of First Nature’s alteration, pillaging and transformation through capitalism. Carolina in the 1670s was pre-capitalist; however, there was just as large of a fallout from what Shaftesbury and Locke accomplished through their work on St Giles Kussoe. Although Shaftesbury was a Lords Proprietor and acted in concert with the other seven Proprietors on almost all matters concerning their colony, he enacted a strong degree of freewill and agency in Carolina through his private estate there.

Here, his agency as an English improver and Fellow of the Society supersedes the taken-for-granted structure of improvement and English elitism that created and populated the Royal Society. Biersack (2006a:5) points out that another recent reorientation of political ecology engages actors and their agency with less emphasis on "structures, systems and interlocking variables." As improvement writers and proponents worked the use of the words 'improvement' and 'invention' into their work and daily discourse midcentury, these terms became "a catchphrase" that summarized how the concept could be applied to anything, not just a farm (Slack 2015:7). However, improvement was still practiced with greatest effect on estates, several improvement manuals were written in complex ways with Latin phrases, and only elite gentlemen were Fellows of the Society. The ideas of improvement and early science may have become more readily identifiable as a structure or system as the century progressed, but only certain privileged agents had direct access to the structure to take advantage of it.
However, property rights, civil government, the English empire's market system, and colonialism were structures that tied agents to their causes. Likewise, those structures were tied together by and dependent upon those agents. While Biersack (2006a, 2006b) points out that political ecology has lessened its reliance on the structures of political economy, I choose to treat the individuals at the center of my research as singular people who utilized their access to structural power when and where needed.

Unequal power relations are central to political ecology (Bryant 1997:5). In some examples, political ecology works to understand the 'First/Third World' dichotomy created by and perpetuated through the administration and maintenance of lopsided power (Brannstrom 2004; Bryant and Bailey 1997; Sandilands 1998; Turner 2003). Karl Offen (2004:22) states that political ecology "seeks to understand...the discursive-material manifestations of power." I identify private property in the seventeenth century as the discursive-material manifestation of the lopsided power relations between the state and the state's agents. Those agents had prerogative, opinions, directions and beliefs that guided their lives regardless of how big or small their decisions, or those decisions' outcomes, turned out to be. As the following chapters of this dissertation make clear, not all of the elites who governed Carolina in the 1670s were equals due to the English social caste system—likewise, not all colonial agents were equal either. Since the power and the people were unbalanced, so too was their effect on and results from their changes to the local ecology: private property creation, implementation of improvement and coordination of foreign laborers.

In the following section, I outline how historical anthropology augments my political ecology so that I can better position the creators and manipulators of colonial power
within the processes of property creation, improvement and the practice of making improvement scientific. Historical anthropology also forces a reconsideration of the social relations, but more important the social positions, of enslaved Africans during their first 20 years in Carolina—positions within the ecologies of their improving owners.

HISTORICAL ANTHROPOLOGY

The 'historical' of my historical political ecology is not simply a reference to 'history,' 'historiography,' or 'the past.' Rather, it is from historical anthropology. Historical anthropology provokes me to read and interpret all past peoples—elites and subaltern alike—in highly critical ways through archival and archaeologically based ethnographic methods (Axel 2002; Comaroff and Comaroff 1991; Stoler 2002), and it offers a way to reassess colonialism through decolonization and postcolonial interpretations of the past, (Given 2004; O'Callaghan 1995; Thomas 1994; Yurick 1995).

By taking an historical anthropological approach to the colonial political ecological origins of scientific improvement within private property in Carolina, I am better able to interpret the labor of the elites, servants and slaves that worked to create St Giles Kussoe.

Historical anthropology pays attention to colonialism's archival content and its peculiar and particular form, which brings about an "ethnographic sensibility to an archival object" through "theoretical intervention" (Axel 2002:14). This perspective allows me to condense the "dynamic interaction of the colonizer and the colonized" into "one analytic field" (Axel 2002:9). Taking this "one analytic field" idea further, I borrow from Thomas's (1994.ix) insistence that "only localized theories and historically specific accounts can provide much insight into the varied articulations of colonizing and counter-colonial representations and practices." Instead of concentrating on only the local within
Carolina and the effects of colonialism on colonists and settlers, I also focus on the local in England and the locations of English colonialism there. For example, Shaftesbury's Wimborne St Giles's House in the countryside, where conversations turned into colonial laws and property pursuits; or his Exeter House residence where the Treasury Lords met on colonial matters multiple times a week; or, the meeting places of the Royal Society of London, which occurred not only in formal university settings but at Exeter House. I see the "colonizer" not only on the ground in Carolina, but on the ground in England. Rather than relying solely on the settlers, servants and slaves that created and lived within the colony, I look to England to understand how and why Carolina was colonized by not only settlers, but by ideas, ideals and theoretical philosophy.

In a standardized description of Carolina, the 'colonizer' would be the white colonial settler regardless of their rights to property, wealth or social position, while the 'colonized' would be the indigenous Native Americans. Carolina scholarship openly allows colonialism to be the binding glue, defining force and overarching ideology that defined the positions of everyone involved in the colony regardless of who they were, where they settled/lived, or what they did. Standard colonialism, as an interpretive device, means that everyone involved in the colony of Carolina played out their seemingly preordained, structurally formulaic lives on the typical colonial stage and had scripted, non-dynamic interactions with each other. An uncritical approach to colonialism's power prevents anthropologists from seeing colonizers and the colonized as "one analytic field" (Axel 2002:9). Likewise, colonization "did not act as a one-way process: the colonial power shifted in the strength it exerted on one of its colonies at any given time, the power applied to colonies may have been different at the same time, [and]
the affect of these power fluctuations on the colonized groups of people may not have
affected each equally" (O'Callaghan 1995:22). To think that white colonists in Carolina
were unified in their pursuit of a better life is just as ridiculous as believing that the Lords
Proprietors were unified in their ideal for a perfect Carolina: they may have been united
in purpose and direction, but not in action. To think that Shaftesbury wielded power in
Carolina with the same intensity, every day, year after year, is also unreasonable.

When I apply a critical reorientation of colonialism to the origins of Carolina, the
unbalanced power present in that colony during its formative years is more clearly
defined: an elite planter who lived in a mansion upon 2,000 acres was just as much a
colonist as was the struggling shopkeeper in town who only had food four days a week.
Scholarship on colonialism usually always elevates the white colonist to the level of
'colonizer' because indigenes were present at the same time to be labeled as the
'colonized.' When the label 'colonizer' is used on someone like Shaftesbury, the normal
usage of that label loses its inherent meaning—a person in the colony—and picks up a
new meaning—a person with the power to create colonists.

A restructured colonial perspective on Shaftesbury and his role in Carolina realigns
our understanding of what the wielders of colonial power actually did with their
privilege. A colonial power, like the state, can be recognized as "alien" to the colonized
"locals" because the state comes "from outside, [speaks] a different language, or
[belongs] to a radically different culture" (Given 2004:4). Colonized peoples are
"controlled and exploited by a group who come from another 'country'" (Given 2004:4).
However, colonialism was a form of modernization where indigenes and Europeans alike
were modernized through the "ideal of the cultivated European" (Escobar 1995:43)
because colonization brought people to the New World and drew them into "the
dominion of European 'civilization'" (Comaroff and Comaroff 1991:26). From this I can
claim that anyone involved in the process of colonialism—servants, slaves, masters,
elites, Proprietors—became further 'cultivated' or 'civilized.' This notion of the 'cultivated
European' directly mirrors the hallmark of political ecology theory: when humans alter
the earth, their physical act reflexively alters those humans, and the decisions they act
upon that direct their alteration of the earth forever alters their future decisions. In turn,
then, the act of cultivating the earth *cultivates* the human being; the process of using
cultivation to civilize the earth further *civilizes* the human cultivators. This reflexive
cultivation process occurred only through human labor. Below is a reassessment of labor
in the colonial realm with regard to property formation and what kinds of people
executed what kinds of labor.

**LABOR AS LABOR**

Of all things needed for the new colony, the one thing that was most required was
labor. Laborers built the colony, created properties, implemented English improvement
and generated products that confirmed improvement was a benefit. Colonialism forced a
countless many to labor in and for colonies. Colonial labor is usually understood as hard,
physical labor: felling trees, tilling soil, building houses, driving animals and mounting
defenses; also, procuring water, food and meals, dairying, tailoring, and upkeep of
colonial households. What of the labor of elites, especially those such as the Lords
Proprietors in England? What was the effort of their labor? Was it similar to the exertion
of their colonists? Did all people involved in a colonial effort expend the same amounts
or kinds of labor? When we use the word 'labor,' what are we actually talking about?
Because historical anthropology forces us to rethink the colonial arena, it should also force us to reconceptualize what labor was in the past, how it was weighted, and why some people in the past can be interpreted as laboring more than others due to their social position in the world. Utilizing Locke's labor theory of property, Russell (2004:310-314) points out that labor is directive, which is not the same as exertion. Labor is goal-oriented; labor selects the things that meet our needs; labor is the decision-making process that determines what is and is not a resource worthy of use; and, labor sorts out external factors inherent to farming: "the world does not come already divided into resources and impediments; it is up to labor to sort them out" (Russell 2004:311-312). There is more to labor than just swinging a hoe blade.

In similar fashion, Mossoff (2012) sees Locke's labor as a reference to overall production, which was work of both body and mind. In Locke's Chapter 5, "of Property," Locke pointed out that both "Inventions and Arts" are properties that are products of labor, which are clearly works of intellect (Mossoff 2012:303). To most people, however, labor is 'hard work' or something that is toilsome, bothersome or time-consuming (Kramer 1997:173). In his work on Locke's labor theory of property, Kramer (1997:176) points out that laborious work sounds like it should garner special rewards, but a reward is not a necessary result of the labor or its intensity. Therefore, the kind of work should not lead one to expect more in return: hard work at anything is hard work worthy of compensation; hard work of the mind should not garner less compensation than hard work of the hand.

The work of the pen and mind is labor. Shaftesbury wrote letters—orders, commands, requests, news, appointments—to Carolina for almost 14 straight years, but
we cannot believe that the letters preserved in archives were the only letters sent, or drafted. What was the weight of the labor spent on thinking and discussing the content of the letters before they were written? What of the weeks of thought on a topic that resulted in the simple writing of one letter? Ann Stoler (2002:157) questions what "historical weight to assign" to past designs that were drafted yet never implemented, or how to treat history that was unrealized or not enacted—"non-events"—that surely occupied the colonizer's mind and time. Purchasing and accounting, meetings of government committees, and parliamentary debates may not have been labor or 'toil' similar to breaking soil or wrestling cattle, but it was labor nonetheless.

When we read the colonial letters as static, they can appear as strict labor orders sent to colonists by their colonial overlords. This view turns the colonists into helpless subaltern laborers with almost no agency; the same view labels the letter-writers as aristocratic elites who did not work at all. Focusing too intently on the written records of the past constrain what agents of empire actually did, and also limits those agents to only what they said, not what they thought (Axel 2002:14). Historical anthropology allows the anthropologist to read descriptions of "colonial utopias" as "blueprints of distress" (Stoler 2002:157). Even though colonial administrators may have written their colonists with demanding labor requirements, and complaints about all of the products that were not sent to England, they may have received untold amounts of other goods they did not mention. This is the "historians' Achilles Heel": if it was not written it did not happen—"nowhere can anything and everything be thought or written or done or told" (Comaroff and Comaroff 1991:17).
In order to understand the positioning of Shaftesbury within the English empire, and to identify English elites as laboring individuals of society, not just the lazy reapers of it, I borrow the "studying up" approach from ethnographic anthropology (Knauft 2007; McCarthy 2002; Priyadharshini 2003; Welker et al. 2011). This approach studies the entities—nations, agents and companies/corporations—that hold, control and utilize power at different levels of intensity. Critically questioning whether a country and its domain is an empire or not brings about a new focus on what an empire is, what its scope is both politically and economically, how militarism plays a role in its control, and, importantly, what the effect of empire is on the agents embedded within it, those who work directly for it in advancing its range, and the people who come under subjugation, domination and influence by it (Knauft 2007; Stoler 2006). Empires "thrive on turbid taxonomies that produce shadow populations and ever-improved coercive measures" and they also "give rise to new zones of exclusion and new sites of—and social groups with—privileged exemption" (Stoler 2006:128, emphasis original). Lastly, the study of empire allows for a reinterpretation of the agents involved in empire building: the agents that emerge as a component of empire, and the agents who are the subjects produced by empire (Stoler 2006:142).

Such a reassessment of the agents of empire not only recontextualizes how they wielded state power in the past, but how that power affected and shaped them as social agents. "Studying up" studies, not scrutinizes (Priyadharshini 2003), the people in the highest of positions, like the CEOs and owners of corporations, in order to better understand and interpret the subaltern that work below them: to know the employees better, one has to know the employers best. Beginning in the nineteenth century,
anthropology was traditionally focused on "noncapitalist, nonmodern and non-Western" peoples (Welker et al. 2011:S5). When capitalism was identified as an entity that affected workers, anthropologists in the 1930s started to focus on those workers while ignoring their employers. But without historical study of the corporate form, the true nature of subaltern laborers, especially how they are positioned, cannot be accurately understood or placed in relation to their corporate framework (Welker et al. 2011:S5).

The "studying up" approach allows me to identify Royal Society fellows as "scientific 'experts' whose assumptions, visions, and management techniques" were "imposed on others" (Goldman and Turner 2011:5). Some of those men were involved in imposing those qualities onto the colonies through the cultivation of both the land and the colonists. While Charles II defined the Royal Society of London as an organization that would push the spirit of improvement throughout his empire, Shaftesbury and Locke, as Royal Society fellows, took the king’s power and prerogative, amplified it through their own agentive power and will, and unleashed an English improvement augmented through scientific methodology on Carolina. Because Shaftesbury and Locke had the chance to do this on land that had never been altered in the English way, echoes of the Society's mission to build a better English reality can be heard at St Giles Kussoe: the desire to create completely new private property through improvement identified pristine/First nature by producing Second nature.

Echoing the 'colonizer/colonized' model in Carolina, "outsiders" brought experimental techniques, based in science, into "local" settings to improve upon already existing farming practices—science that is used to improve upon improvement (Ramisch 2011:280). Agricultural innovations such as new crop types or husbandry practices
"originate from scientific research activities, such as replicated experiments within the controlled conditions of research stations or laboratories" (Ramisch 2011:280). These replicated experiments can be the "previous work" mentioned by Latour (1979:244) that was collected in the enclosure that formed the scientific laboratory. Previous work was also older, traditional agricultural patterns that were adapted and improved upon in New World colonial settings through the rigor of scientific methodology. The indentured servants and enslaved Africans were placed into a "Stranger's House"-type setting that was the colonial estate laboratory: the managers watched and observed their laborers change the land into property for the first time, and what kind of skills they used in their work. When the practice of science is contextualized within historical political ecology, the "experts" become Royal Society fellows, and at the same time, those fellows, people like Shaftesbury and Locke, can be identified as "outsiders" to the colonial setting. Ramisch's (2011:280) "research stations" become colonial estate farm outposts that tested theory and method through agriculture and husbandry for the benefit of England's growing empire. While Ramisch discusses these practices in relation to the current day, their assessment is easily transposed to the past.

Finally, my ability to identify archaeological sites in 1670s Carolina as "research stations or laboratories" positions the enslaved Africans and white indentured servants that labored for Shaftesbury as technicians. My redefinition of the ecology in Carolina's early years changes the "fumbling" and "haphazard, frequently unsuccessful" agricultural failures into the calculating, precise and rigorous practice of late seventeenth century efforts by people, like Shaftesbury and Locke, to advance improvement through experimental scientific methods. Since I identify St Giles Kussoe as a laboratory with
several research stations scattered within, the enslaved and indentured laborers are identified as technicians who ran the experiments.

The following chapters provide clear, strong examples of how my three main research problems are addressed through historical political ecology, how St Giles Kussoe was an early English laboratory, and how Africans became enslaved technicians when they conducted English-born scientific experimentation in the New World. In Chapter 5 the particular language and words Locke chose to use in his labor theory of property are unraveled to demonstrate how his prose can be read as a "lesson" in how to create Second Nature. In Chapter 6, my property-oriented landscape archaeology analysis of St Giles Kussoe identified the hallmarks of Locke's theory woven into the fabric of the property. Finally, in Chapter 8, I outline how enslaved Africans produced Second Nature through their labor and experimentation to create vineyards and work in the wine industry for Shaftesbury.
CHAPTER 3

HISTORIC CONTEXT FOR THE MATERIALITY OF IMPROVEMENT

This chapter addresses the first of the three primary problems that shape my dissertation project: Where and what were the English seventeenth century places of experiment (Shapin 1988)? The places of seventeenth century experiment varied in complexity, purpose and form. The "laboratory" was not just a place where experiments on plants, trees, crops and animals were performed, but a place where experiments were engineered and conducted on the social constructs of labor, property relations and enclosure. This chapter explains how places that, on the surface, have characteristics or qualities indicative of a scientific laboratory were actually not true places of experiment because they ultimately were created to generate profit and information useful to the scientist—or, the private property owner-improver.

At St Giles Kussoe the results of the experiments conducted there were more valuable than the products of the experiments. The empirical process creates knowledge; the laboratory—the place of experiment—was a place intended to produce facts (Shapin 1988, 1994). Although Shaftesbury, as an improver, may have had early capitalist tendencies, when I define his plantation as a laboratory, he was more of a 'social capitalist' instead. Shaftesbury labored for the colony and its residents, and his Carolina estate was a place where his laborers conducted quite possibly the earliest scientifically-oriented work on a private property in the colony. While his laborers, both servants and enslaved Africans, conducted experiments, Shaftesbury learned how they performed at
their tasks, if their experiments were productive and ran to completion, and if they were able to innovate and intuitively improve upon mistakes, errors and problems during the trial. Those observations helped Shaftesbury know how to improve indentured servant labor, but most importantly, enslaved labor so the English colonies could benefit from better, more efficient enslaved Africans, especially those knowledgeable of the exotic crops the Lords Proprietors hoped would flourish.

This chapter provides a background for the development of an ecologically-reflexive colonial laboratory based on the seventeenth century paradigm of improvement. It begins to identify the colonial context for the materiality of improvement. Improvement was adopted and practiced in varying degrees of intensity throughout most colonies; however, it was never considered to be the backbone of any colony prior to Carolina's launch in 1669. Improvement gained momentum with each decade, culminating with the Restoration of Charles II, the subsequent settlement of Carolina, and most directly, the involvement of Shaftesbury.

Private property in England was a power source for estate owners who grew in influence due to the improvement of their land. This chapter provides examples of people who were improvers or were improvement-minded in the colonies and how enslaved African labor factored into their mindset. Lastly, the Restoration of Charles II is contextualized alongside the rise of the Lords Proprietors of Carolina so that Carolina can be identified as England's first true colony built upon the experiment-based paradigm of improvement. This background context provides a basis for the origins of Locke's labor theory of property, which I argue stemmed from his own interest in the 'polyandrous marriage' of colonial property, improvement and labor reform.
ENGLISH PROPERTY

Property was not clearly defined in the feudal period. It was described as a right a person had to a thing, and commonly that thing was land (Aylmer 1980). Property in any form ultimately belonged to the reigning king or queen, and the Crown-appointed lords controlled the manors that worked the Crown’s land. The commons were the lands that were not enclosed by the manor. Although there were usually small strips of commons for collective peasant farming inside manorial boundaries, what lay outside those walls was untamed, wild and vast. On those vast commons, people who lived outside the manors made the land workable for their own use, and farming decisions and when and where livestock could pasture was collectively decided upon by those people, who were referred to as commoners (Allen 1991, 1992; Berkes 1996; Brodrick 1881; Comninel 2000). All common land, however, was not considered prime and commoners had to make do with what the commons naturally provided. The best land was usually controlled by the lord of the manor, who was granted rights to that land by the king. To keep land within the realm, lords began to enclose the good land in the vast commons apart from the wasteland, or the land consisting of moors, heaths, bogs, fens, dense forests—land that required serious manipulation to become arable and pasture. The lords’ expansion of their manors—the enclosure of the commons—had several outcomes.

Advances in enclosure made by manorial lords represent "the oldest explanation for the destruction of the English peasantry" (Allen 1992:37). Late fifteenth and early sixteenth century enclosure movements forever changed the property relations between all people in England (Allen 1992, Comninel 2000). Lords and peasants once had equal rights to land under the king, but enclosure and the changes it brought during the mid-
sixteenth century created a rift that turned peasants into commoners (Peet 1981). Allen (1992:39) identifies two major waves of enclosure that led to this social split: the first wave, from 1450 to 1524, brought high inequality in property ownership, evictions that led to massive depopulation of peasants from their lords’ land, and the destruction of the classic manorial peasant village. The second wave of enclosure, from 1575 to 1674, both increased property inequality, but to a lesser degree than the first wave, and forced village-born inhabitants to move elsewhere (Allen 1992:39). Although Allen identifies two major waves of enclosure that occurred before 1700, enclosure was a consistent practice since the fifteenth century and became consistent and regular among property holders between 1500 and 1550 (Hoyle 2011; Shannon 2011).

As lords enclosed the commons and wastes they evicted peasants from those lands and forced those newly dispossessed people to become squatters on the commons outside the new enclosure. Hedges and fences on new property lines barred entry and access from commoners to the good soil and land they once farmed. As a result, commoners had to labor harder on unfavorable, unpreferred soil and land for sustenance. The continued loss of open-fields and commons meant more land for landlords, which led to further advancements in the improvement of land (Kennedy 2008).

THE BIRTH OF ENGLISH IMPROVEMENT

John Fitzherbert’s publications in 1523, the *Boke of Husbandrye* and *Boke of Surveyinge and Improvements*, were the first true English publications on farming (Prothero 1917:90). Fitzherbert argued that enclosed lands offered superior yields and did away with the "perpetual disputes, the damage to crops," and the wasting of land by people—commoners—who worked it occasionally and then abandoned it (Prothero
Critics against enclosure believed it led to the conversion of arable—land suitable for growing crops—to pasture, which reduced employment. In contrast to this belief, Fitzherbert's 1539 book *Surveyenge* insisted that "enclosure promoted convertible husbandry which implied greater employment and higher corn yields" (Allen 1991:236). Fitzherbert was the first writer to commit such strong support for enclosure and improvement to print.

Following these publications, the confirmation of the Statute of Merton in 1549, entitled *An act concerning the improvements of moors and waste ground*, was a change in law that let lords exercise their right to enclose wasteland without tenant consent as long as tenants’ needs were still met (Hoyle 2011:14; Shannon 2011:175; Slack 2015:5; Warde 2011:132). By 1580 landowners started to rapidly enclose the commons and wastes to earn more money and produce more goods (Hoyle 2011:12-13). The manorial lord’s enclosed land was private property, which removed the need for collective decision making. If the lord wanted to introduce a new crop type, or convert land from field to pasture or vice versa, they could do it with no consensus from anyone. Beginning in roughly 1580 “landowners began to explore the potential of their estates in earnest” and move forward with the “process of modernization—or improvement” (Hoyle 2011:12).

In the sixteenth century, improvement in a practical, applicable sense primarily involved changes made to tenancy arrangements, tenant evictions, “the enclosure of ground,” or the revival of lost rents (Hoyle 2011:2). Improvements and enclosure worked in tandem: as enclosures grew and lords obtained more private land, the lords' improvements made for easier, more efficient management of the land because it was enclosed (Brodrick 1881). Lords used enclosure as a powerful tool to consolidate the best
available land in the commons, which shrunk while estates grew (Brodrick 1881; Shannon 2011). Landlords could consume the commons at even faster rates with the aid of surveyors' estate maps that became more common by 1600. Maps allowed the landlord to both see and conceptualize acreage and value, where rents were due, and where improvement could speed up “the consolidation of land, the extinction of common rights over arable and the enclosure of commons” (Hoyle 2011:13). Maps merged with property rights and tenant reductions brought estate owners newly found social and economic power based on their augmented relation to property.

MECHANICAL, NOT PHILOSOPHICAL, IMPROVEMENT

Although landowners were beginning to modernize through the improvement of their lands beginning in the 1580s (Hoyle 2011:12), improvements through the 1620s were mostly practical in nature. Husbandry advanced by 1600, but the tools and equipment, which did include a large variety of implements (Thirsk 1967), were not any better than in prior years (Prothero 1917:91-92). The act and progression of enclosure was also not a "deep, structural, unconscious" force that swept through England evenly (Williamson 2000:58). Landlords who were aware of improvement made mostly mechanical adjustments and only a small number of those people thought of improvement as a philosophical movement that could be applied to every English thing possible: land, education, industry, business, colonialism and private property (Thirsk 1967:161-162). Some forms of improvement were more technologically advanced than others, and the technology started to spark new ways to work with, and understand, nature.
One of the most technologically advanced forms of land improvement was the development of watered, or floating, meadows. Waterways were diverted through ditches and formal canals to allow water to pass over pastures to protect winter grasses from frost, which also added nutrients to the soil—efforts that allowed spring grazing to begin earlier than on unimproved pastures (Bettey 1999:179-180; Hodgetts 2006:128-129).

Thicker grass led to more hay for livestock to eat all year (Historic England 2018). Shaftesbury's grandfather, Sir Anthony Ashley, improved his Wimborne St Giles meadows through floating as Dorset county did between c.1600 and 1640 (Bettey 1977; Cook et al. 2003). Importantly, water systems were easier to install when larger, enclosed tracts were privately owned because a large amount of land was required to make the technology work (Allen 1992:121; Cook and Williamson 1999:10).

Besides technology applied to meadows, new plants like hop clover, broad clover, sainfoin, ryegrass and turnips were adopted as improvements in the southern English counties after 1640 (Hodgetts 2006:128; Thirsk 1984:331). These plants provided extra food when sheep were overwintered, new grass sources for grazing livestock, and green amendments for increased soil fertility. Vast expanses of English salt marsh and associated wetlands, known as 'fens,' were ditched and drained for conversion into arable and pasture (Thirsk 1984:312). Meadow watering and fen drainage were forms of enclosure and improvement that created larger surpluses: more coleseed for oil needed in the soap and cloth industries and more corn, hemp and flax for livestock, cordage and cloth (Thirsk 1984:312). Enclosure of the lowlands or any other undesirable wastes and commons ultimately provided more work for the poor (Thirsk 1984:318-319).
IMPROVEMENT TURNS PHILOSOPHICAL

While a "flurry of enclosing activity" took place in England between about 1617 and 1630, enclosure slowed dramatically during the 1630s as royal councilors and law courts took active steps to deter private enclosures (Hindle 1998:40). Alongside enclosure was also a small "flurry" of new publications in those decades that promoted not only the improvement of land but the improvement of England and its realm. Some improvers were listened to and new methods were borrowed but promises that improvement would create "populated wastes with a prosperous peasantry" did not come to fruition following harvest failures of the late 1620s and early 1630s (Hindle 1998:40). Although a vast amount of land was enclosed throughout England after 1600 (Clark and Clark 2001), the options for either property holders to expand their closes, or for new property holders to begin enclosing, were greatly reduced during the 1630s. Estate owners who saw the true potential in improvement and faced roadblocks to their expansion began to cast their gaze abroad to America and the Caribbean. In America, land was perceived as limitless—limitless land meant limitless crops and livestock.

Since at least the 1560s, "men were imbued with the conviction that everything could and should be employed and improved" because population increases raised the need for more food and medicine sources: only through improvement could the latent potentials of "wild fruits, wild animals, weeds, wildflowers, [and] insects" be harnessed "to promote the health of men and stock" (Thirsk 1967:161). The first leading voice of the improvement movement who personified the above listed sentiment was Sir Francis Bacon. Scholars credit Francis Bacon as the primary motivator for the formation of the Royal Society of London (Feingold 1998:172; Friedel 2007:162-166; Garber 2014;
Hunter 1981; Merchant 2008; Sprat 1958 [1667]). Bacon’s work *Novum Organum* *Scientarium* (1620), or the 'new instrument of science', laid out the scientific method upon which modern scientific inquiry was founded (Pastorino 2011). He published numerous pamphlets and short works from the 1590s until his death in 1623, after which his unfinished and unpublished works were released posthumously. Bacon wrote on the improvement of almost everything possible: gardens, farms, schools, religious institutions, language reform, foreign lands and even kingdoms.

Bacon was also personally involved with colonialism: he was an investor and board member of the Virginia and East India Companies in 1607 (Drayton 2000:56) and received a charter from the king to send an expedition for colonial settlement to Newfoundland in 1610 (Cell 1965). Sir Anthony Ashley sat on the Virginia Company council with Bacon (Fleming 2007:50). Bacon also became Lord Chancellor in 1618—Shaftesbury received the same office in 1672. Francis Bacon hoped that England would heed his advice and fully accept improvement as the way to move the kingdom and its empire into a new era of prosperity and excellence—Shaftesbury carried the same sentiment through his hopes and dreams for Carolina. The English colonies, however, did not adopt or develop the paradigmatic kind of improvement that Bacon called for, where life itself was a never-ending experimental program—or science experiment—that worked to change humanity into its greatest form. Instead, improvement in the colonies started simply, slowly and primarily through physical means.

**EARLY ENGLISH COLONIES: IRELAND AND VIRGINIA**

If improvement caught on slowly, even if only mechanically, in England during the early seventeenth century, then as an influence it was even slower to be adopted in the
colonies. To utilize the late sixteenth and early seventeenth century improvement texts written by Bacon and others such as Plat, Markham, Norden and Mun (Slack 2015), the hopeful improver had to be able to read. Improvement writers sometimes wrote in Latin—Bacon especially—which was a sign the author's intended audience were estate owners (Bauman and Briggs 2003:12; De Beer 1955a:16). Early seventeenth century improvement texts contained extremely useful information; however, only those with the money to buy books and the privilege of an education could afford and understand the words to put them to use. Owners of English estates who went to America had the potential to improve both their colonial property and the colony but not all did: some men attempted improvement in various ways and failed, while others succeeded but their achievements were not adopted colony-wide.

Uprisings and rebellion in Ireland, which helped instigate the settlement of Munster in 1583, created the perfect situation for “improvement in the English style by English hands” (Slack 2015:66). The push to cultivate the wastes, royal forests and fens of England was “transferred naturally to proposals for Irish plantations” in the 1580s (Slack 2015:66). Enclosure was enacted in Ireland but in uneven ways due to harsh terrain settings that restricted the quality of land surveys and the establishment of firm property lines (Breen 2007; Hill 1993; McCarthy-Morrough 1986). Cattle and sheep mostly roamed in an open-range, instead of enclosed-pasture, system (Hill 1993). Industries like iron smelting, fishing and cloth were successful in Ireland, and can be dubbed forms of improvement, but those industries already existed in England and were nothing more than extensions of the English economy paired with the accumulation of private property by English investors (Barnard 2008; Rynne 2009). Thirsk (1967:162) points out that the
works of writers such as Norden [1607] and Speed [1626] insisted that "if men exploited their resources to the full...they would not need to settle new plantations overseas." In other words, if they were good improvers at home there was no need to go to a colony.

In Virginia, settled in 1607, colonists completely abandoned the tradition of pasturing cattle within small strips of land to manure the soil for conversion to arable land later (Carr and Menard 1989). Land was not fenced in and enclosure was not favored. The plough was not favored in Virginia either: axes and hoes were the preferred tools for agriculture, which was definitely not an English hallmark in the early part of the century (Carr and Menard 1989:409). Thirsk (1967:163) lists "the plough, the harrow, the clodding beetle, the drag, roller, fork, weedhook, reaphook, scythe, sickle, pitchfork, rake, flail, sled, and seedlip, the dung cart, and the corn cart or wain" as well as four kinds of ploughs that were available to the arable husbandman from the later sixteenth into mid-seventeenth centuries; Virginia planters seemed to reject most of these.

THE WINTHROPS: ENCLOSERS AND SCIENTISTS

In 1629, John Winthrop was wealthy from his large English estate but was spiritually bankrupt; his desires for a safe haven for Puritanism led him to New England (Labaree 1979:28-29). Although people had already been settling in New England, Winthrop knew they needed more support. He got 20,000 people aboard 200 ships to go to Massachusetts Bay between 1629 and 1643 (Labaree 1979:30). No other English colony, at any time in England's colonial history, was launched at such a large scale. Winthrop wrote a pamphlet entitled General Considerations for the Plantation in New England (1629) and although it is a treatise that argued to take aboriginal land through divine right, he made enclosure and improvement the primary means to claim land. In his Considerations
Winthrop (1629) asked a hypothetical question: "but what warrant have we to take that land [New England], which is and hath been of long tyme possessed of others the sons of Adam?" He replied simply yet powerfully: "That which is common to all is proper to none. This savage people ruleth over many lands without title or property; for they inclose no ground."

Winthrop was clear that the enclosure of land, introduction of cattle, and even the addition of manure to soil gave people a civil right to the land apart from the God given natural rights that the Native Americans were still living under. Lastly, Winthrop (1629) referenced earth as "the Lord's garden" that was given to the "sons of Adam to bee tilled and improved by them" and argued that "why should we stand starving here for places of habitation" while the natives allowed their land to "lie waste without any improvement?"

Here, Winthrop's managerial experience of his large English estate can be read in his enclosure and improvement language with regards to the settlement of—or, property creation and improvement of—New England. However, enclosure was mainly the mechanism to take land from natives and assert it as English, and improvement was used here as a term related to the privatization and intensification of property. Property based on scientific principles, theories and experimentation were still decades away.

John Winthrop, Jr., like his father before him, became governor of Massachusetts Bay Colony and died holding that position (Brasch 1931). Winthrop Jr. was the first true chemist and metallurgist in the American colonies, one of America's earliest medical scholars, and the first American colonist to become a fellow of the Royal Society of London in 1663 (Brasch 1931:339). He "was recognized as a man of great learning", which awarded him responsibilities by his father early on in the local government
(Brasch 1931:339). When he arrived in the colony in 1631 his most valuable possession was his large collection of books—a library he expanded yearly—that can easily be considered the largest, earliest scientific library in the United States: he owned 52 books on chemistry alone (Brasch 1931:339). Winthrop Jr. was in England in 1641 and when he returned to the colony he established two iron-works (Chisholm 1911:736). Later in 1648 he was granted commission to manufacture salt and saltpetre (Brasch 1931:340). Three years later in Connecticut, Winthrop Jr. was granted a monopoly for working “lead, copper, tin, antimony, vitriol, alum” and other related industries (Brasch 1931:340).

The early projects of John Winthrop, Jr. were based in early science and he surely had a laboratory to conduct his metallurgy experiments. His laboratory was a particular form of private property, or at least a part of the property was used strictly for science, and he promoted and advanced industries like gunpowder and iron works through scientific practice and principle. However, science was not formalized in the 1630s and 1640s, at least not in the way it was practiced in university settings in the 1650s (Hunter 1981). Importantly, his work did not force the colony to change its charter to make natural philosophy the center of colonial activity, life and commerce.

SAMUEL HARTLIB: THE INFLUENCE OF ENGLAND'S 'FIRST' IMPROVER

Before 1650, English improvers tried to spread their information to the colonies. Of all writers and activists for improvement, Samuel Hartlib is recognized as the person responsible for the origination of the "Invisible College," which was the first social group of elites who eventually founded the Royal Society of London (Hunter 1981:38-39; Webster 1974; Wood 1984). This "College," or think-tank also known as the Hartlib Circle, worked to spread their influence wherever possible, including the colonies.
Hartlib worked heavily on education reform and published several works on this topic in the 1640s (Webster 1970). Those aware of the Hartlib Circle "likened it to 'Salomon's House' in Bacon's New Atlantis" due to the large range of real world applications the Circle's members saw fit for the application of Baconian science (Hunter 1981:22). Hartlib was a proponent of improvement in a holistic, general sense, where any and all things could be made better if only people would adopt new, innovative ideas and try things they never thought possible. Slack (2015:108) cites Hartlib's Legacie [1652] to point out that cultural change for the English was a slow process, but one that had to happen if England were to progress and become modern: "The major part of the people [were] wonderfully wedded to old customs." Since the colonies were new creations, but filled with custom-loving colonists, improvers like Hartlib were actively trying to shift minds in the New World.

One of the improvers who worked hard to influence Virginia was William Bullock. Bullock advocated for improvement in England and argued that Virginia planters wanted to grow corn and other staples but the Virginia Company's consistent push for tobacco kept planters hooked on the drug (Thompson 2004:118). As long as tobacco was the crop of focus, true improvement in Virginia would be stalled. Bullock encouraged arable crops for holders of smaller tracts of land and indigo, silk and metal ore extraction and furnaces on the larger tracts of wealthier planters (Thompson 2004:109). His father, Hugh Bullock, worked in Virginia for 12 years, and although he had never been in the colony, he wrote his Virginia Impartially Examined in 1649 and attracted attention in England.

Unfortunately, William Bullock believed too strongly in improvement as an idea and his beliefs backfired. Samuel Hartlib, in his Ephemerides (1649), wrote that William
Bullock took English families to Virginia to raise cattle and grow corn, flax and rice (Thompson 2004:124). Bullock believed he and the new settler families would get aid and assistance from the 'Old Planters' in Virginia, or those who had been there the longest and had the most farming experience. His dreams turned into nightmares: he and his new colonists received no local help at all and almost all of the families that went with Bullock died the winter they arrived (Thompson 2004:124). The problem was that the 'Old Planters' did not listen intently to their English improver counterparts, nor did English improvers readily pay attention to colonists (Thompson 2004:127). Here, the social battle between those still invested in old customs and the followers of improvement resulted in the loss of life from colonists stuck in the middle.

By 1650, English farmers were catching on to experiments, improvement and more modern forms of husbandry. In contrast, New World colonial farmers were behind the times. John Ferrar, an investor, treasurer, deputy governor and King's council for the Virginia Company (Peckard 1790), was an associate of Samuel Hartlib as noted in Hartlib's *A Rare and New Discovery...for the Feeding of Silk-worms in the woods on the Mulberry leaves in Virginia* [1652]. Ferrar owned a copy of Bullock's *Virginia Impartially Examined*, in which Ferrar made several notes in the margins (Thompson 2004:111-113). These notes reveal that the plough was still not employed in Virginia after 40 years of settlement, which mattered if corn and other crops were Bullock's argument to end tobacco agriculture. Bullock also insisted that silk would be a worthy commodity for the colony, but Ferrar, in his deep knowledge and experience with Virginia, knew that mulberry trees were a failure (Thompson 2004:119-120). Ferrar expressed the on-the-ground experience of the Chesapeake 'Old Planters' through his
dismissal of Bullock's hopes for silk. English improvers could insist all they wanted: Virginian planters were not interested, not capable, or not willing to improve property and land into something greater.

Hartlib worked hard to convince landlords and farmers that improvement was in their best interest. The improvement of wastes and commons were a constant focus of attention. One concerned person, Cressy Dymock, was upset that land in England was lying waste and decided to develop ways to reorganize the general layout of a farm as revealed in a letter he wrote Hartlib in 1651 (Grove 1981). He expressed to Hartlib the ways an English farmer could change their field-pasture-settlement layout to increase productivity with little increase in labor (Grove 1981:27). He believed his ideas on reforming farms would increase the conversion and improvement of commons, moors, fens and marshes into good land that would be highly profitable (Grove 1981:27).

Dymock identified one major impediment to improvement: tradition. If a lord inherited or purchased land, that lord usually left the land the way they got it (Grove 1981:35). Sentiment, which grew either through the time spent working the land or the money spent on the purchase, handcuffed the landlord to the traditions and customs before him, which prevented him from modernizing the land through improvement. This sentimental attachment to the previous work of others echoes the practices of the 'Old' Virginia planters: what worked for them worked with no need for change or improvement. While Dymock's theories and models, based in geometry and economics, appear innovative, modern and extremely useful, no one applied his work in either the seventeenth or eighteenth centuries (Grove 1981:36). Dymock (Hartlib 1651:16) closed his Essay of Advancement of Husbandry-Learning claiming that if the improvement of
talents and arts were adopted then God would "make our valleys stand so thicke with corn that they shall laugh and sing." Unfortunately, Dymock was yet another improver whose advice fell on deaf ears.

One person who drew attention was Benjamin Worsley, a "major figure" and member of the Hartlib Circle (Shapin 1994:144 n.49). Worsley was a land surveyor in Ireland, an experimental chemist, and proponent of enclosure and agricultural reform (Wood 1984:22-23). In 1649 Worsley worked hard to make Virginia become "the interest of the Commonwealth" through his insistence that the colony had to end their deep relationship and affinity for tobacco (Thompson 2004:121-122). Worsley was possibly one of the strongest, earliest improvers who could instigate real change, or at least create more interest. In 1650, Cromwell's government created the Council of Trade, on which Worsley was secretary who was already "known as an expert on plantation affairs" (Andrews 1908:24). This council, and its various later forms, directed colonial policy for the betterment of the kingdom—Worsley, then, could enact real-world influence through what would soon become the paradigm of improvement.

IMPROVEMENT IN THE CARIBBEAN

English Caribbean colonies first tried to grow tobacco, indigo, and cotton as export crops (Akenson 1997; Handler 1969; Hicks 2007; Pestana 2003). Even though sugar was introduced shortly after Barbados became a colony in 1627, it was not a factorable commodity until 1644 when it registered as just 8% of all commodity transactions (McCusker and Menard 2004:292). Planters of small tracts, even in the 1640s, were better served to devote their time to the production of cotton and tobacco instead of sugar because there was no real market for sugar yet; and, sugar required an industrial system
to turn sugarcane into sugar products (McCusker and Menard 2004). However, sugar was enticing and showed great promise to Barbados' English investors, and they moved on it in the 1640s thanks to Barbados' pioneers in sugar technology: Richard Holdip, Constant Sylvester and James Drax (Otremba 2012:254).

James Drax is attributed as not only one of the first Barbadians to grow sugar, but as the person responsible for importing Dutch sugar mill technology to Barbados in the 1640s (Otremba 2012:248). In 1642 he began to grow sugar and possessed 22 enslaved Africans (Campbell and Scott 1993:99). Just two years later he purchased 34 additional Africans, which was the second largest, earliest purchase of slaves in Barbados at that time (McCusker and Menard 2004:305-306). While I can find no direct references to James Drax's exposure to or noted utility of English improvement during the 1640s, his actions for so early a time in Barbados's development suggests he operated with an improvement mindset. His work generated interest in the island for property prospectors as evidenced by land purchases during the 1640s.

PROPERTY ORIENTS IMPROVEMENT

New land purchases on Barbados from 1639 to 1647 demonstrate exactly when sugar became known as a viable, profitable investment for English prospects (Table 3.1). Sugar jumped from 8% to 16% and then 27% of all commodities on the island in 1644, 1645 and 1646 respectively (McCusker and Menard 2004:292). Merchant land purchases those years followed what was known to be profitable: tobacco and cotton. But, sugar's increase during the 1644 to 1646 period demonstrates that investment was worthwhile.

Showing his early savvy for investment in colonial interests, Shaftesbury, and a resident planter named Gerard Hawtaine, bought a 205-acre property in Barbados in 1646.
Based on McCusker's and Menard's (2004:296) figures, Shaftesbury and Hawtaine acquired one of only five investor-purchased tracts during a four-year time period. Here, Shaftesbury's speculation and investment in both sugar and land markets proved timely and advantageous. Shaftesbury later sued Hawtaine for withheld plantation profits and was awarded £890 in damages and lost revenue in 1652 (Hawtaine 1893:26). Hawtaine was later forced to pay £974:8:10 to Shaftesbury for his 100-acre portion of the plantation, which made Shaftesbury sole owner of the 205-acre tract (Hawtaine 1893:32). Afterwards, Shaftesbury sold the plantation for £1,005 (Spurr 2011:104). Besides the problems from his partner, Shaftesbury turned sugar and land speculation into a highly worthwhile investment.

Although Drax had just begun to experiment with sugar, sugar labor, African slavery and milling, sugar technology did not spread to the whole island overnight. Shaftesbury and Hawtaine may have been following the slow but steady progress of sugar production and capitalized on available land when they could, because the following year English merchants bought 30 tracts of land (McCusker and Menard 2004:296). Twenty-two of those merchants accounted for 10,000 acres, which was 10% of the island of Barbados (McCusker and Menard 2004:296). Also in 1647, there was a major shift in land use, as more acreage was devoted to profitable crops than subsistence (Handler and Lange 1978:16). Sugar climbed to 60% then 100% of Barbadian commodities in 1648 and 1649 (McCusker and Menard 2004:292). At the end of this decade, Barbados became “England’s first experimental tropical export colony” (Bergman and Smith 2014:419) because sugar finally became a major crop that could support regular shipments (McCusker and Menard 2004:290).
These above listed figures demonstrate that land values increased when certain kinds of agriculture were combined with a technological-improvement component. It took only three years of sugar production to persuade new investors in London to buy Barbadian property. The English elite may have realized that if the improvement of property through technological agriculture raised land values in England, the same should hold true in the colonies. Although Barbados may have appeared to be a colony built upon improvement and technology, those elements were introduced 20 years after initial settlement and helped create and maintain a major profitable export crop. William Bullock tried and failed to instill an improvement mindset in Virginia 40 years after it was first settled; at literally the same time Barbados's adoption of improvement made the island England's richest colony. Carolina, on the other hand, was founded on improvement. Barbados used improvement to stabilize an export crop; Carolina used improvement to stabilize all aspects of English life in the New World.

Shaftesbury planned to use experimental agriculture to increase the value of his Carolina plantation. To Locke, however, only one thing truly made land valuable: labor. In Carolina, the labor that made land the most valuable was enslaved labor because it was augmented through the paradigm of improvement.

ENSELAVED TECHNOLOGY

Improvement materialized itself through different forms in the seventeenth century, such as ditches on land, crops from foreign sources, and new tools. However, improvement also materialized itself as a form of human labor: African slavery. Echoing this idea is Meniketti’s (2004:54) position that slavery on Nevis was not only “an economic constituent” but a “form of technology.” Otremba (2012:27) states that both
Africa and the Caribbean were involved in England's scientific development. When African slavery is described as technology, this characterization illustrates that the institution of slavery and the enslaved themselves can be interpreted as a form of improvement. However, I do not claim that an enslaved African was only a "living labor-machine" (Marx 1978:255) or an instrument of improvement devoid of agency. Instead, I argue that the specific kinds of labor that Africans brought to colonies were harnessed as technology, and as the English became more familiar with Africans and their work, the English realized they had an improvement-capable labor force.

English administrators and colonists were well aware that Africans possessed skills that would help make New World crops proliferate. In the first few years of settlement after 1630 at the island colony of Providence off the Nicaragua coast, both indentured servants and enslaved Africans worked tobacco and cotton, but the quality was poor and yields were too small for profits (Kupperman 1988:80). By the mid-1630s almost half of Providence's population was comprised of enslaved Africans because the island's colonists “were convinced that only by slave labor” could the poor quality of tobacco and cotton be improved (Kupperman 1988:81). Tobacco growth accelerated, and cotton was so productive that England sent “engines and instruments” to Providence to make cotton and linen fustian and dimities (Kupperman 1988:83). Besides these cash crops the enslaved also grew food that the colonists needed (Carney and Rosomoff 2009:104-105). The work—the improvement—of the enslaved on Providence supports Meniketti's interpretation of 'slavery-as-technology' quite clearly—to improve the colony's crops, a different form of improvement, African labor, was required.
South Carolina rice planters in the eighteenth century selectively chose West Africans who were already knowledgeable and skilled in rice agriculture (Carney 2001; Fields-Black 2008; Littlefield 1981). Scholars argue that Africans, not Europeans, figured out how to grow rice in swamps and that the technology responsible for Carolina's immense rice wealth was mostly, if not purely, West African in origin (Carney 2001; Fields-Black 2008; Littlefield 1981; Smith 2012). In an argument for a less West African-dominated source of rice agriculture in South Carolina, Eltis, Morgan and Richardson (2007:1332) point out that enslaved Africans were "experimenters and improvisers" in the New World as much as their owners were. Those authors (2007:1353-4) also point out that "European planters were avid experimenters", and if they were, then it was possible that Africans "were as much improvisers and experimenters as Europeans."

A part of European 'experimentation' was the challenge of mastering a familiar form of labor—African slavery—in a new, unfamiliar colonial environment. While scholars are mostly focused on the cultural origins of agriculture, I look at the labor origins responsible for agriculture: a seed can sprout and grow, but only labor makes it into something more than nature intended. When later seventeenth century Carolina farms and estates are viewed as private properties oriented through historical political ecology we can identify colonial agro-laboratories that gave birth to crops such as rice in Carolina. At those labs different forms of labor were tried and tested, husbandry altered and remade, plants torn apart and pieced back together again, and people forced to do things that were simultaneously familiar and unfamiliar: a laborer may have easily known how to plant a tree but not in the soil type or elevation they were instructed to plant in.
CHARLES II AND CHANGE

The fall of Cromwell in 1658 brought about the need for major change to England and new direction for the empire. Thanks to a well coordinated effort drafted in part by Shaftesbury and other loyalists (Haley 1968:136-138), Charles II gained safe passage back to England in 1659 and became king in 1660. The new king had different ideas about business, trade and England’s economy. Shaftesbury was named Chancellor to the Exchequer and Keeper of the Great Seal, which placed him in extremely close contact with the king on a regular basis. It is highly possible that Shaftesbury’s accountant-like skills and "capitalistic instincts" (Haley 1968:234) in his many business investments not only caught the king’s attention but influenced the king’s decisions in the 1660s—a decade defined by improvement and natural philosophy.

Early in his reign, Charles II worked to change or eradicate Cromwell's policies and decisions. The Navigation Acts were rechartered in the early 1660s, which required all exports from anywhere outside England to travel only to England for redistribution to foreign countries; likewise, all imports to English colonies had to come from England or its colonies (Labaree 1979:94). For Massachusetts, the Acts protected and assured the colony that their economy would be safe and strong: shipments to England were protected by the English Navy, which made Bay area shipbuilders and planters feel safe in their exports (Labaree 1979:94). In contrast, the Acts hurt Virginia’s economy because the colony could no longer trade directly with the Dutch (Kelso 1984:13). In the Caribbean, the Acts created a unique trade agreement between English colonies and the Spanish. The Crown gave license to Spaniards in the Americas to only trade Africans with the English, but not goods from Europe, Asia or Africa (Handler and Lange...
This slaves-only trade policy echoes my assertion that enslaved Africans were a key component to the improvement of England's colonies.

Change to the Navigation Acts also created the opportunity for land to be bought and sold, and be heritable to descendants, but since a quitrent was still due to the Crown the land was not fully freehold (Akenson 1997:81). It is possible that these expanded property rights gave planters on Barbados new impetus to experiment with the already 20-year old sugar industry and open up improvement on their estates. In 1662, Barbadian sugar planter Henry Drax, son of James Drax, assumed control and ownership of his father's Drax Hall and began attempts to make the plantation sustainable through manure amendments to the soils and the implementation of a "tree-planting program" designed to conserve wood (Thomspn 2009:572). Such a tree program was certainly in line with John Evelyn's work in *Sylva* (1664): the first publication of the Royal Society that was a treatise on better forest management, logging and tree replanting for estate owners. While Drax was never a Royal Society fellow, he may have been familiar with improvement literature through his father James, who sat on the Council of Foreign Plantations in the early 1660s with Robert Boyle (Otremba 2012:89). Boyle was one of the Royal Society's founding members and one of their most active scientists of the 1660s. It makes sense that the Drax family was familiar with the Society: James was one of the very first improvers on Barbados due to his early work on sugar, milling and enslaved African labor, while Henry implemented cutting-edge management techniques almost 20 years later—improvement ran in the family.

When Carolina was rechartered in 1663 it was based off of the original colonial plan for the colony Carolana first designed by Charles I in 1629. Samuel Hartlib involved
himself in the creation of a settlement in Carolana since no one had taken it up by 1643 (Leng 2009); his associate Ferrar also believed that Carolana should be settled and suggested "sugar, sassafras, corn, silk, rice, indigo, vine and olives" as suitable crops (Thompson 2004:120). Hartlib encouraged French Huguenots to settle the colonial charter south of Virginia. Unfortunately, England was invested in the Civil Wars and could not commit money or people to this new colonial cause (Leng 2009). This did not dissuade Hartlib and his two closest Huguenot partners from drafting a treatise that would guide the settlement of Carolana.

The treatise, a numbered list of hopes and orders, made improvement the goal of the colony. First listed on the treatise is "1. To improve the way of Husbandry far beyond what it now is," and later, "3. The Improvement of husbandry in few years shall yield to the Public benefit of the state 3,600 choice Seamen to serve in time of War and Peace" (Greengrass et al. 2013). Here, Hartlib attributed population increase to the improvement of husbandry, which is evocative of the origins of improvement: advances made in husbandry increased food that helped people prosper. If Carolana was settled according to Hartlib's and his Huguenot partners' plans, it would have been the first English colony to be settled under the rubric of improvement. I identify Charles II's Carolina as the modern version of Carolana: a colony evocative of and founded on Hartlib's mission.

Lastly, the Royal Society of London was chartered by Charles II for a third time in 1663, except this iteration carried with it the endorsement of the king, who formally interjected his own hopes for improvement into the Society. The new charter changed the name of the Society to the "Royal Society of London for the Improvement of Natural Knowledge" where the words following "London" were not present from 1660 until this
new charter was written. The fact that the king himself made sure the word improvement was included in front of a moniker for natural philosophy clearly demonstrates that Charles II was doing everything in his power to modernize England and its empire through the paradigm of improvement.

CAROLINA AND ITS LORDS PROPRIETORS

Carolina was given to eight newly created Lords Proprietors who would govern and run the colony for the king (Lesser 1995). These Proprietors were granted the power of the Durham Palatinate, one of the most powerful positions an English citizen could hold. The Palatinate model of government was created in the Middle Ages because lords needed local autonomy to give full support to the kings through the years, especially when those lords were outside the reach of Westminster, the center of English government (Martinez 2008-2010:309). Under this model, the Palantine was granted nearly all the powers of the king so that residents of distant counties, like Durham, got the timely assistance and resolve that government was supposed to provide. The Palantine's power allowed the county to act as a “kingdom within a kingdom” (Martinez 2008-2010:309; Thornton 2001:237).

It is argued that Charles II specifically chose the Carolina Proprietors mainly because of their support for him in exile during Cromwell's reign and their loyalty to Charles I (Lesser 1995:2; Weir 1983:48-49; Wood 1974:13). However, I interpret Charles II's choices as having more to do with the eight Lords' colonial experience and their practice of improvement than loyalty. Some of the Carolina Proprietors collectively held decades of colonial experience prior to the beginning of their service, which was a motivator in Charles's decision to choose them.
EIGHT HEADS (OF STATE) ARE BETTER THAN ONE

Since the Proprietors of colonies leased their land from the king, they determined the rights to property in their colony; they organized the settlement of colonists and the division of land; they chose the agricultural, manufacturing, industrial, and marketable outlets; and, they chose the local colonial governing body. They were all-powerful; therefore, seventeenth century colonists had a tendency to resist the sole Proprietorships when they could, especially when the power was greatly unbalanced and the colonists' property rights were in flux (Martinez 2008-2010). It is possible that assigning eight Proprietors, rather than one or a few to a colony was a smart plan that could prevent settler unrest.

Palatinate power was seen as a problem: in England, palatines kept the king at a distance from the locals, but could also subject the locals to "the petty tyranny of a local lord" (Martinez 2008-2010:309). Because colonial Proprietors never settled in their colonies (Pestana 2003:390), colonists may have feared that their sole Proprietor, who lived in England with Palatinate power, had the potential to be tyrannical from afar and keep colonial concerns at a great distance from the king both spatially and socially. It is possible that the vast experience of Carolina's eight Proprietors helped set their colonists at ease—more people equals diversity, more knowledge and better judgment—and removed fears that a single ego could wreck unchecked havoc on a colony—decisions made by a council evokes fairness and thoughtfulness. Here, Charles II may have created the most experimental colonial government in nearly 80 years of England's colonization of the Atlantic, and if that government was an experiment, then the colony under that government should also be highly experimental.
The Lords Proprietors of Carolina were George Monck, the Duke of Albemarle (b.1608-d.1670); Sir Edward Hyde, the First Earl of Clarendon (b.1609-d.1674); William Craven, the First Earl of Craven (b. 1608-d.1697); John Berkeley, First Baron Berkeley of Stratton (b.1602-d.1678); Sir William Berkeley (b.1605-d.1677); Sir George Carteret (b.1610-d.1680); Sir John Colleton (b.1608-d.1666); and, Lord Anthony Ashley Cooper, who later became First Earl of Shaftesbury in 1672. When looking at the individual experiences of these eight men, it appears that Charles II may have chosen them because they had diverse knowledge, personal experience and unique skills that, when merged together into a governing council, would serve a colony better as a collective than if the king chose just one of these men as sole Proprietor. Even though some of the Lords had no colonial experience at all, they had experience in English government that those with colonial know-how did not have.

PROPRIETOR IMPROVERS

William Berkeley arrived at Jamestown, Virginia in 1642 as the new colonial governor and became a gentry planter who was improvement-minded: instead of tobacco, he produced flax, fruits, rice, silk, potash and spirits that he exported through a commercial network that fed markets in England, Holland, and American and Caribbean colonies (Billings 2000). His crop choices placed him in line with the anti-tobacco recommendations for wealthy planters from improvers like William Bullock (Thompson 2004:109), who wrote in his *Virginia Impartially Examined* that tobacco was "the fatal commodity" of the colony (Bullock 1649:63). Although he apparently lost interest and was not an active Proprietor by 1670 (Lesser 1995:6), Berkeley's time and experience as Virginia's governor was certainly useful to the new Carolina Proprietorship.
Berkeley was recruited for Carolina by Sir John Colleton who was a blood relative of Monck, the first Palatine of Carolina (Weir 1983:49). Monck was a lifelong soldier and commander of armies and navies and had no colonial experience other than his stationing in Scotland during Cromwell's reign (Agha et al. 2012:13). John Colleton fled England for Barbados after Charles I's death, acquired land there for a sugar plantation during the 1650s and became the island's major-general (Otremba 2012:1). Colleton was a successful sugar planter by 1660 when he returned to England to draw favor from Charles II. From 1661 to 1664 he sat for the Council of Foreign Plantations alongside James Drax and Robert Boyle (Otremba 2012:89). Colleton helped design the original effort to settle Charles Towne in 1664 at the Cape Fear River on the border between North and South Carolina today, but that settlement failed due to colonist problems, dispersed farms with no town center, and harsh weather (Loftfield 2005). John died in 1666 shortly after the fort and settlement at Charles Towne was abandoned; his son Sir Peter Colleton (b.1635-d.1694) immediately took over as Proprietor.

Clarendon was primarily an English statesman who served as Lord Chancellor to Charles II from 1658 to 1667. He had no connections to colonies. John Berkeley had no colonial experience, unlike his younger brother William Berkeley of Virginia. Sir George Carteret also had no experience with colonies prior to Carolina, while the First Earl of Craven sat on the Committee for the Tangier colony. As mentioned earlier, Shaftesbury was co-owner of a sugar plantation on Barbados from 1646 to 1652, and he also co-owned a ship, the Rose, that sailed for the Guinea Trade, which, at the time, was most likely involved in trading slaves and exotic goods (Agha et al. 2012).
Carteret and John Berkeley were created Proprietors of the Jersey colony in 1664, which is today's New Jersey state. Jersey was chartered and given to the king’s brother, the Duke of York, who had worked closely with John Berkeley since the late 1640s. In 1665 Berkeley and Carteret wrote a constitution for Jersey that was based on the 1663 charter for Carolina (McCormick 1964:24). The Jersey Proprietors were basically “real estate promoters” that tried to attract settlers to “their domain” to “derive a profitable revenue from land rents” (McCormick 1964:24). The fact that the colony was built upon the desire to earn money from land rents echoes back to the sixteenth century root of English improvement. It is likely the king wanted John Berkeley and Carteret to promote property in Carolina like they did for Jersey.

COUNCILS OF TRADE AND FOREIGN PLANTATIONS

One colonial experience that almost all of the Proprietors shared was their service on the Council of Trade and Council for Foreign Plantations. The Privy Council's standing committee on trade and foreign plantations was appointed shortly after Charles II became king, and by the end of 1660 the council was split into a Council of Trade and a Council for Foreign Plantations, or foreign colonies (Andrews 1908). These Councils were supposed to be effective in managing England's overseas interests; however, they were poorly organized and were duplicating a lot of the same work based on the same topics: trade, mercantilism, and colonial settlement and production.

From 1660 to 1664, John Berkeley, Carteret, Colleton, Clarendon, and Shaftesbury sat on both councils while William Berkeley sat on only the Council for Foreign Plantations (Andrews 1908). All colonial correspondence was channeled through the Council for Foreign Plantations and dealt with at each meeting, which was nearly every
nine days (Andrews 1908). That Council heard from colonial governors, weighed the requests for imports and exports, and reported the status of colonies to the king. The Council of Trade focused only on overseas commerce. Shaftesbury became President of the Trade Council in 1668 and revitalized it after a few years of stagnation (Wood 1984:33); two years later he jumpstarted the Council for Foreign Plantations and decided to combine both Councils (Haley 1968:255-260). Shaftesbury assumed the Presidency of the combined Council at the end of 1672 and had Benjamin Worsley as his first Secretary. Although John Berkeley, Clarendon and Carteret had no practical working experience in or with a colony prior to 1660, these Councils surely gave them knowledge that benefited their Carolina Proprietorships.

Besides their positions and Council service, some of these Proprietors were Royal Society fellows. Shaftesbury was the first of the group to become a fellow in August 1663, just three months after the Society's inaugural meeting that May (Birch 1756:365-366). Clarendon and Monck became fellows in 1665, while George Carteret's son, Phillipe, became a fellow of the Society that year. It is likely that Carteret learned about Society matters personally from his son, as well as from his Proprietor partners. Lastly, John Locke, who became a fellow in 1668, worked closely with Robert Boyle on experiments that involved the study of air and weather (Anderson 1923; Anstey 2002a; Woolhouse 2007:109, 113, 147, 156).

THE ADVENT OF CAROLINA AS A NEW, IMPROVED COLONY

In this chapter I demonstrated that while some colonial production resembled English improvement in the seventeenth century, the colonial administrators, and even most of the colonial elites and common settlers below them, were not intentionally
operating within the paradigm of English improvement. When improvers called for colonies to change, they had few listeners. Some colonial elites followed the recommendations of improvers; others completely ignored their English counterparts.

Michael Guasco (2014:156) asserts that "in each colony, an effort was made to replicate England." The Carolina Proprietors wanted their colony to be a replica of England that used improvement to be greater than its origin. The Proprietors employed improvement primarily to plant and perpetuate a thriving, mostly self-sufficient English society in the New World, independent from foreign imports, and founded on natural philosophy principles. To Charles II and his Proprietors, Carolina was not just another attempt to make a new colony, but the chance to use improvement as a colonial blueprint. Furthermore, improvement would not be introduced simply through a handful of inspired colonists. Instead, it was to be the baseline for all colonial activity.

Private property within the colony could harness improvement and turn it into science through rigor and repeated experiments. Since St Giles Kussoe was the location of science, it first had to be private property; a form of private property that was created through theory rooted in natural philosophy. That theory was Locke's labor theory of property, and in Chapter 4, I dissect Locke's theory, unravel its origins, and actively apply it through St Giles Kussoe to demonstrate that Shaftesbury's plantation was the materiality of Locke's theory.
Table 3.1. Date ranges for land transactions between 1639 and 1649 (McCusker and Menard 2004:296).

<table>
<thead>
<tr>
<th>Date range</th>
<th>1639-1642</th>
<th>1643-1646</th>
<th>1647</th>
<th>1648</th>
<th>1649</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracts bought</td>
<td>1 to 2</td>
<td>4 to 5</td>
<td>30</td>
<td>11</td>
<td>2 to 3</td>
</tr>
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CHAPTER 4

THE COLONIAL CONTEXT OF LOCKE'S PROPERTY

Although Carolina was organized, developed and funded by the Lords Proprietors, John Locke was an influence in the success of the Proprietary venture. Locke was not a nobleman; he was not given a title like knight, or created a Lord or Baron. But he was friends with Shaftesbury, and that friendship imbued Locke with power and privilege beyond most other men in Shaftesbury's company. It was their working relationship through Carolina and how it molded Locke into a scholar during the 1660s and early 1670s that provides the basis of this chapter. By the time of the Restoration, improvement, as a concept, had grown through the century and became a belief that would propel colonialism. Carolina was, technically, an 'experiment waiting to happen'—a vast expanse of improvement-ready wasteland and commons ripe for new enclosures and new private property. This chapter demonstrates that the first real improvers—or, the first early scientists—to push the improvement potential to the limit in Carolina were Shaftesbury and Locke. And, since improvement in the later seventeenth century was strongly affixed to private property, Shaftesbury and Locke needed private land of their own to practice improvement through scientifically oriented methods, which would expedite the actualization of Carolina as a fully modern colony. Those methods, however, needed a guiding theory—this and the following chapters provide the argument that the theory was Locke's thesis on property.
A crucial question begs to be answered: Why did Locke need or want land in Carolina? The world knows only Locke "the philosopher," not Locke "the farmer" or Locke "the colonist." Locke was to have his own island on the Carolina coast, which is today's Edisto Island south of Charleston. Locke Island is not a major topic of research, and the few scholars that discuss it tend to attribute Locke Island to only Shaftesbury and his failed plans there—it is as if Locke's name affixed to the island had no real historical significance at all (Fagg 1970:227-228; Weir 1983:62). This chapter contextualizes and intrinsically links together Locke, his work with Shaftesbury, his personal colonial endeavors, and his Royal Society fellowship and associated scientific experiences to begin to solve my second research problem: the time period that Locke began work on his property theory. R.W.K. Hinton (1974) argues that Locke began work on his theory between 1673 and 1675, which is earlier than the 1679 to 1681 period commonly agreed upon by Locke scholars (Ashcraft 1986; Laslett 1960; Woolhouse 2007). While Hinton (1974) provides ways to read Locke's "Chapter 5" in the Second Treatise to see it as an earlier product, he did not delve deeply into the colonial evidence behind his theory—this chapter attempts to improve upon Hinton's work.

This chapter sets up Locke's theory as the instigation to the creation of Second Nature in a colonial setting. Locke actually began conceiving his theory when he started working for the Lords Proprietors because he had the opportunity to develop a vast estate in the New World; when that estate, Locke Island, failed to come to fruition, he continued working on his theory for use at St Giles Kussoe.
Shaftesbury and Locke met each other at the recommendation of David Thomas, a chemist and experimentalist at Oxford in the 1660s who was Locke's mentor (Woolhouse 2007:66, 70-71). While searching for a cure or at least respite from the gastrointestinal pain he had suffered for at least 20 years, Shaftesbury pursued mineral spa water and Thomas knew of a source that might help. Thomas asked Locke in July 1666 to procure 12 bottles of water from the village Astrop 17 miles away and bring them back to Oxford for Shaftesbury (Woolhouse 2001:70-71). When Shaftesbury got there, Locke met him and told him the water he sought was not available, and Shaftesbury, not wanting to travel further, agreed to take water Locke had from a different source. Their meeting was pure chance: Locke had returned to Oxford only months earlier to continue his study of medicine in hopes of becoming a medical doctor, while Shaftesbury was in desperation searching for relief from his pains (Haley 1968:203). Shaftesbury apparently took such a liking to Locke that after less than a year of familiarity Locke agreed to take residence at Shaftesbury's Exeter House in London, May 1667 (Woolhouse 2007:77).

After an intense fit of pain in May 1668, a "soft tumor the size of an ostrich-egg suddenly sprang up" from Shaftesbury's torso and made itself visible below his sternum (Haley 1968:202). He turned to Locke for advice on what to do: surgery seemed to be the only remedy (Haley 1968:203-205). Locke did not direct the operation; however, he recommended the surgeon, took detailed notes of the procedure and watched over Shaftesbury during his weeks-long recovery to make sure the surgery was a success (Anstey and Principe 2011). Throughout the rest of his life Shaftesbury and his family owed his recovery to Locke (Anstey and Principe 2011:380-381; Haley 1968:205).
These events are crucial to my interpretations. Locke and his work to become a medical doctor was in line with the practice of seventeenth century science. David Thomas had an experimental chemistry laboratory at Oxford and Locke worked there frequently when he returned to resume studies in 1666 (Cope 1999:7; Woolhouse 2007:66, 73). However, Locke's work on experimentation and natural philosophy began years earlier when Locke entered Oxford in 1660. Upon entry he met Robert Boyle, who had established his own chemistry lab in 1655 (Woolhouse 2007:34). Robert Boyle, "the most prominent Baconian of the time" (Wood 1991:336), was in contact with Samuel Hartlib in the 1650s as Boyle's lab took shape (Parry 1999:144). While Gresham College accumulated scholars aligned with improvement and early scientific principles and practice, and would be the think-tank that sparked the Royal Society (Hunter 1981; Shapin 1988), Oxford, too, housed similar individuals like Boyle and Thomas, as well as Christopher Wren and Seth Ward—all original founders of the Society (Hunter 1981:23). The minds at Gresham and Oxford saw Bacon's imaginary "Salomon's House" from *The New Atlantis* (1627) as the blueprint for the Society, England, and the world. It is therefore important to point out that Locke's early participation with Boyle and Thomas not only fostered Locke's notions towards natural philosophy, but influenced the ways he would address problems in England and its colonies.

**CONNECTIONS BETWEEN LOCKE, BOYLE AND THE ROYAL SOCIETY**

Locke's arrival at Oxford in 1660 coincided with the founding of the Royal Society. Boyle pushed for the creation of the Society; he became one of its earliest Fellows, and he was the Society's chief scientist and foremost expert on natural philosophy (Hunter 1981; Shapin 1994). At Oxford, Locke and Boyle began their years of scientific work
together. In 1666 Locke performed chemical experiments, based on instructions from Boyle, on "oil of vitriol and spirit of wine" in Thomas' lab (Woolhouse 2007:77). Locke's move to Shaftesbury's household may have taken him away from Boyle and chemistry, but it did not lessen Locke's interest in Boyle and his work. In Locke's massive library of 3,641 titles, the size of his library when he died in 1704, Boyle was the most-represented author at 62 unique entries (Harrison and Laslett 1971:18, 23). Boyle gave some of his tracts to Locke personally, and Locke actually read Boyle's works rather than just allow them to consume space in his library (Harrison and Laslett 1971:23). Harrison and Laslett (1971:4) suggest that Locke "decided that he would never be a natural philosopher" because he quit his work with Boyle and Thomas and "ceased to practice medicine for money." However, Locke's departure from Oxford for Shaftesbury's Exeter House was not the end of his natural philosophy desires, but was just a shift in what he devoted the practice of natural philosophy to: his time with Shaftesbury would be spent on matters colonial, so his practice of natural philosophy simply shifted to Shaftesbury's problems and work on the colonies.

There is, therefore, a strong link between Francis Bacon, Samuel Hartlib, Robert Boyle and John Locke. Hartlib took Bacon's ideas seriously and wanted to implement them wherever possible (Webster 1970); Hartlib's work on improvement directly affected Boyle, who was already a strong adherent to Bacon's improvement-saturated mission, when Boyle's work at Oxford led him to establish "chemistry as a scientific subject distinct from alchemy" (Parry 1999:144-145); and Locke was a pupil at the end of this 'improvement chain,' who was about to leave Oxford to become a fixture in Shaftesbury's household. Locke moved from the dissection rooms and labs at Oxford, thus giving up
his dreams of becoming a doctor, into the house of the man who in just five years would become Lord Chancellor, the highest ranking public official in English government. Although Locke left a purely scholastic, philosophical environment, this was a move upwards socially and also philosophically. Because Locke was a "thorough-going Baconian" (Wood 1991:346) and employed Boyle's method of hypothesizing (Alexander 1991), Locke seems to have used his skills to help Shaftesbury mastermind a new colonial program through Locke's continued immersion in natural philosophy.

In November 1668, Locke became a Fellow of the Royal Society. His membership in the Society was more than merely something to add to a gentleman’s achievements—Locke was an active Society fellow, was personally engaged in experiments, and collected daily weather observations for Boyle's projects (Anderson 1923; Anstey 2002a, 2002b, 2011; Farr 1987; Harris 1994:133, 143, 156, 260; Schankula 1980; Walmsley 2004; Wood 1984; Woolhouse 2007:109, 113, 147, 156). His absence from Oxford was not an absence from early science. In fact, Locke became a Society Fellow two years after leaving Oxford: if anything, his life in Shaftesbury's household jumpstarted his philosophical scholarship. Indeed, Shaftesbury himself created a laboratory at Exeter House around the time Locke started living there in 1667, and "equipment for them was ordered in Ashley's [Shaftesbury's] name as well as Locke's" (Haley 1968:220).

Shaftesbury became a Fellow of the Society shortly after Charles II chartered it in 1663. He gained fellowship because he impressed Boyle with a cider he made from his favorite red-streak apple and his report of an experiment where he changed the flavor of eels by moving them from muddy to clear water (Birch 1756: 365-366; Curtler 1909). His work on the cider was directly related to the decades he spent grafting fruit trees, like
the red-streak apple variety, at his ancestral country estate Wimborne St Giles's house (Christie 1871; Fleming 2007; Haley 1968:30). While Shaftesbury conducted experiments in the countryside, Locke worked in a laboratory at an urban college; together they were Society Fellows and lab partners in the city—the only other environment to conduct experiments and create a laboratory, together, was Carolina.

Locke's residency at Exeter House also exposed him to a busy world of intellectuals, scientists, politicians and dignitaries that put him in close contact with English and colonial matters far beyond what most people in the public were privy to. Quoting Harrison and Laslett (1971:23): "Natural philosophy...was important to the man who would be at his ease in good society, because it was essential to good conversation."

Contact with so many like-minded people sparked Locke to create "an informal speculative club" at Exeter House late in 1670, where the group sat to dissect ideas instead of animals and humans as they did in the Society's chambers (Hollis 2008:150). Aside from this, in 1668 some of the people he encountered at Exeter House were the Lords Proprietors of Carolina, who conducted most Carolina affairs at Exeter House before 1670 (Fagg 1970:120-122). The Proprietors did not have a secretary managing their affairs, paperwork, and colonial correspondence for their original launch of Carolina in 1663, so Shaftesbury created the managerial position and gave it to Locke sometime in 1668 (Fagg 1970:121). This was Locke's first funded colonial job and it quickly immersed him in Carolina.

By 1 March 1669, Shaftesbury and Locke had completed the *Fundamental Constitutions of Carolina*, which was the set of laws and rules for colonists and colonial government to follow. The *Constitutions* were ratified by the Proprietors and given to the
families and servants who left in August that year to settle Charles Towne (Haley 1968:248). While Locke was secretary he received and sent correspondence between the Proprietors and Carolina. Letters from the colony included information on everything Carolina had to offer: wildlife, weather, air and water quality, plants and trees, as well as the disposition of the natives near and far and the Spanish to the south in Florida. Locke summarized several letters into a "Carolina Notebook" that he used to index news on certain topics in list form to easily update the Proprietors. He also kept working maps of the colony as information about places and people came to him (Fagg 170:125-126). Locke's mapping was important to not only Carolina but the empire: Proprietor Peter Colleton asked Locke to provide him with his Carolina maps and to write a description of Carolina for their use in royal cosmographer John Ogilby's forthcoming atlas America: Being the latest, and most accurate description of the new world published in 1671 (Edwards 2012:95; Fagg 1970:126). This work may have really made Locke think about Carolina as not just a colony, or the place his work centered around, but as a real place situated in the natural world—a natural world that needed strong civil laws that would allow for the improvement of land into property. Locke's activities entwined his worlds of early science, England and Carolina.

PHILOSOPHICAL AND COLONIAL ASPIRATIONS ARISE

To Locke scholars, 1671 signals the beginning of Locke's philosophical life. It was during this year that Locke began drafting the Essay to the Human Understanding, which is readily identified as the most important philosophical document of the seventeenth century because his works "dominated the English mind in the first half of the eighteenth century" (Aaron 1937:308) and partly established a foundation for the ensuing
Enlightenment (Aarsleff 1994). Related to my thesis, the Essay contains "important Baconian elements" that fix it as a work en vogue with natural philosophy of the time period (Wood 1991:359). Drafting the Essay, however, may not have been the only important thing that was occupying Locke's mind during 1671, nor was it the only thing that received his application of improvement and natural philosophy.

In April, Locke was made a Landgrave of Carolina, which entitled him to a claim of 48,000 acres in the colony (Armitage 2004:623 n.33; SP 2000:314). He was listed among the colony's original three Landgraves (SP 2000:314) and his name appears first on the list (SP 2000:475 n.). The reasons why Locke became Landgrave are apparent: on the Landgrave patent, Shaftesbury credited Locke for "'his great prudence, learning and industry both in settling the form of government and in placing colonies on the Ashley River'"; this language was unique to Locke's patent versus other early Landgraves (MS Locke b.5/9, cited in Armitage 2004:608). However, the creation of Locke as a Landgrave went against the King’s Carolina Charter: only inhabitants in Carolina could be made Landgrave, not people in England (Arneil 1996:69). Shaftesbury would have seen Locke as exactly the kind of person that Charles II needed to make Carolina a success: Locke was committed to natural philosophy, which the king wanted spread throughout the empire, and as Landgrave, he could help the Proprietors actualize their dreams of a colony full of estates, thus serving the king's wishes.

Locke took Carolina seriously and made it his next 'natural philosophy project' because Locke appeared to have the intention to live in Carolina and develop a vast property there. In 1679 he made several comments to his French colleagues about the status of Locke Island, and that he was making plans to “flee a corrupt England for his
Carolinian utopia" (Armitage 2004:610-611). However, Locke may have wanted to settle in Carolina much earlier than 1679, and his move across the Atlantic was to be timed with Shaftesbury's launch of his own 12,000-acre estate in the colony. Since May 1674 signals the moment Shaftesbury put his plantation plans into action, Locke's activities with Shaftesbury between 1671 and May 1674 are highly important to my thesis that Locke began to craft his labor theory of property preceding St Giles Kussoe due to one critical fact: St Giles Kussoe was supposed to be established on Locke Island.

We must remember that the *Fundamental Constitutions* contained the civil laws concerning private property and its distribution according to social status. It is very possible that both Shaftesbury and Locke crafted what they believed was the best property regime for not only the colony, but for their own aspirations in Carolina—Shaftesbury had the power as Proprietor to do both. Scholars strongly suggest that Locke wrote his *Two Treatises* for Shaftesbury's Whig-related political gain (Ashcraft 1986:9; Laslett 1960:27; Sreenivasan 1995:14-15). It is also possible Locke wrote the *Two Treatises* partly for his own gain as well, albeit in the New World.

1671 TO 1673: PIVOTAL EXPERIENCES

If Locke were living in isolation, not involved with Carolina, and certainly not in the company of Shaftesbury, it would be difficult to believe that Locke began devising his labor theory of property between 1673 and 1675 as Hinton (1974) suggests. But, Hinton's (1974) hypothesis can be believable because he reads a colonial context in Locke's theory, and attributes that context to Locke's connection to English colonialism through Shaftesbury. However, rather than focusing only on the years 1673 to 1675, I connect Locke to Carolina through Shaftesbury beginning in 1668 when Locke became the
Proprietary secretary. The following section details events from 1671 to 1673 to extend Hinton's theorized window when Locke conceived his theory.

The only surviving map that displays the first parcels of private property in Carolina was drawn by Carolina surveyor John Culpepper in 1671. This map displays not only the parcels of individual landowners and their names, but the small, linear town lots that were to be the center of Charles Towne when it was settled in 1670. Twenty-nine different properties are displayed on the map but only one has a symbol representing a building within it: the Lords Proprietors Plantation. This property was a 420-acre tract co-owned by Shaftesbury, Carteret and Peter Colleton that was planned by the men in July 1669 (SP 2000:123-127). On their land they positioned Joseph West to be the storekeeper for the early town and the manager of their affairs for the plantation. This plantation contained one of the only three defensive forts erected in the colony in the 1670s and the plantation was the neighboring property to the south of Charles Towne. Joseph West was in command of the fleet when it left England for Carolina in 1669 and after the colony's first governor died, West replaced him in March 1671.

The Lords Proprietors Plantation was important in the evolution of estate development in Carolina. The plantation was the first actual property taken up by any of the Lords Proprietors. Here, the property rights outlined in the Constitutions, written by Shaftesbury and Locke, may have empowered the former's stake in this plantation. Since the plantation was a Proprietary venture that planned to make profit for all eight of the Proprietors, Locke had to manage correspondence between them and their plantation. Because the purpose of the plantation was for experiments involving husbandry, livestock, and especially gardens, orchards and vineyards, Locke was well aware of not
only what Shaftesbury wanted for the plantation, but what his partners Carteret and
Colleton wanted. He got to see what they each wanted alone and what they decided on
communally. He also learned how they differed in their approaches to improvement: if
the foundation of their plantation was experimentation, then were all three men
improvers? Shaftesbury had been a Society Fellow for almost eight years by 1671 while
Carteret and Colleton were not members at all (although Colleton became a Fellow in
1677). If Shaftesbury was more improvement-minded than the other two men, did he
have problems implementing directives for experiments? Did the three men clash over
decisions for their plantation?

The questions above imply the difference between communally managed and
privately owned properties. As discussed in Chapter 3, the English commons were lands
non-property holders could take advantage of for their existence, and, the commons were
lands that estates could expand into through enclosure. Improvement was born on land by
private property owners who could do as they pleased without permission from a crowd.
Therefore, in the case of the Lords Proprietors Plantation, there may have been an
embedded, hidden experiment occurring regarding not the material improvements and
experiments tried on the ground, but within the property relations between the plantation
and its three owners. Co-owning a plantation in Carolina, even if only by three people,
may have been too communal for any of the three men to push for the kinds of
improvements they wanted individually, and those they could decide upon collectively.
Locke may have sat as either ringside observer to these Lords, worked as participant with
Shaftesbury, or he worked with all three of them on their trials, errors and successes. For
a few years, Locke got to see first-hand what running a plantation in Carolina was all about, and that time was surely instructional and inspirational to him.

In June 1675, Shaftesbury, Carteret and Colleton offered their plantation to Joseph West in place of the salary he was not receiving from the property holders in the colony (SP 2000:466-468). West declined their offer. St Giles Kussoe was newly settled that summer and after four years of stalled colonial progress Shaftesbury may have grown numb to the lack of progress in agricultural experiments and overall improvements. He may have been willing to end his communal ownership with Carteret and Colleton and invest time on his own private property. To Shaftesbury, communal plantation ownership may not have worked in his favor.

But the whole of the Proprietors Plantation was not a total loss. Some improvement did occur early on: a 1671 plat of the plantation shows simple property lines and the star-shaped fort near the river, while a redrawing from 1673 shows a large, ornate experimental garden between the fort and river, and a zig-zagging line depicts a fence that cut the property into a smaller shape. The addition of a fence showed improvement by way of sectioning off, or enclosing, the habitation areas apart from the cattle, which roamed and grazed the rest of the tract. A fence, however, was simply the mechanical act of enclosure—Shaftesbury wanted to see ginger, sugarcane, and foreign grapes thriving alongside almond, orange and olive trees, which were paradigmatic improvements. In the end, the plantation was a failure and never produced what the Proprietors hoped for. If anything, it produced information that Shaftesbury took seriously in the establishment of St Giles Kussoe.
Along with the Lords Proprietors Plantation and Locke becoming Landgrave in 1671, the Royal African Company was revitalized and reformed by the end of the year. Originally founded as the Company of Royal Adventurers Trading into Africa, its creation in 1660 was directly in step with the instant changes and advances made when Charles II ascended the throne. At first the Company only traded for gold, wax, ivory, rare wood and oils, but in 1663, the Company charter was amended to add slaves to the trade list. Shaftesbury became a member of the original Company between 1663 and 1667 (Haley 1968:233 n.), and after the Company began to rapidly fail by 1670, it was reformed November 1671 as the Royal African Company. In the following January, Shaftesbury was elected as the Company's Sub-Governor (Vice-President) and assumed a hefty working role (Haley 1968:233). Shaftesbury also invested £2,000 into the Company where only two other individuals, one the Duke of York, invested more (Haley 1968:233). Shaftesbury's relationship and time with the Company is vital to my interpretations of the Africans he bought for St Giles Kussoe, who are discussed throughout subsequent chapters of my dissertation.

Later in the spring of 1672, Shaftesbury received his peerage as First Earl of Shaftesbury from Charles II, which gave him even more influence in Parliament and the House of Lords, in his home county of Dorset, and in his dealings with colonial matters. He may have had an even stronger influence over Locke after achieving Earldom. John Locke bought £400 of stock in the Royal African Company, which most likely came at the advice of Shaftesbury. If Locke became invested in Shaftesbury's life, that life was full of colonial pursuits and it seems Locke connected personally to almost all of Shaftesbury's ventures through monetary means. Alongside Carolina, the Lords
Proprietors secured a patent and charter from Charles II in November 1670 for the Bahamas Islands near Florida (Haley 1968:232). Each of the Proprietors had one share, worth £100, of the Islands and Locke had one share as well. However, Locke managed to double his shares in the Islands when his physician friend Mr. Mapletoft sold Locke his share in October 1672 (Fox-Bourne 1876:291)—a move that made Locke appear to have a greater invested interest in the Islands than his Proprietor employers and cohort.

At the end of 1672, Locke was reelected to the Royal Society's head council but his attendance was minimal and his experimental reporting to the Society was starting to stall, probably due to the time requirements of Shaftesbury's work and company (Woolhouse 2007:113). Charles II appointed Shaftesbury as Lord Chancellor of England in November, which meant he presided over the House of Lords. This new job instigated Shaftesbury to appoint Locke as Secretary of Presentations, which carried a salary of £300 a year. Now, Locke managed not only all colonial affairs for Carolinas Proprietors, but supervised all ecclesiastical matters required of the Lord Chancellor's duty and position (Woolhouse 2007:112). A year later in October 1673, Shaftesbury appointed Locke secretary of the Council for Trade and Foreign Plantation, which Hinton (1974) identifies as the moment Locke's immersion in colonial affairs began. Locke left that post in December 1675 when he left for a four-year stay in France. As pointed out through this chapter, Locke was well involved in colonialism by the end of 1673. That Locke took over the position from Benjamin Worsley, who was committed to Hartlib's philosophy, shows that the paradigm of improvement and colonialism was linked for decades.
LOCKE AS COLONIAL PLANTER

Locke was 38 years old in 1670 when he first made note of a very irritating cough combined with breathing difficulties (Woolhouse 2007:96). Today, Locke's condition would be diagnosed as asthma and chronic bronchitis; to Locke it was phthisis or consumption, due to the horrible air quality in London that became increasingly worse through the 1660s (Woolhouse 2007:96). Remedy, Locke believed, would come from clean air, so he worked on a trip to New England or Carolina as relief for his bad health (Fox-Bourne 1876:287-288; Woolhouse 2007:112). The trip never occurred and no evidence exists suggesting that Locke intended permanent residency in New England. But, evidence that Locke Island was a real place that bore his name may have been viewed by Locke as a permanent refuge away from England's harsh climate and heavy air pollution, and closer to Shaftesbury and his Carolina. It might seem odd to think that John Locke was at one time possibly considering a permanent move to Carolina. However, once the information surrounding his ideas is contextualized through Shaftesbury's colonialism, a Locke residency in Carolina seemed like a strong possibility for the would-be philosopher.

As stated above, Locke authored the entry on Carolina in John Ogilby's 1671 atlas America. A map accompanying that entry was created from the working maps Locke used to manage the unfolding geography as settlement and exploration of the colony progressed. The published map in America (1671) clearly shows "Locke Iland", which strongly associates and grounds Locke's Landgrave entitlement to the colony. There is no mention of Locke Island by Shaftesbury or the Proprietors until 23 May 1674 when Craven, Shaftesbury and Carteret sent instructions that Governor West and the Grand
Council of Carolina were to "afford all Countenance, help and assistance to our plantation in Loch Island" (SP 2000:439). Also on 23 May 1674, Shaftesbury gave instructions to Andrew Percival, the soon-to-be governor of St Giles Kussoe, that told Percival "to saile directly to Edisto River and there choose a convenient place to settle in upon Lock Island" (SP 2000:441). Although he had a 12,000-acre property surveyed and ready for him as reported on 4 March 1672/3 (SP 2000:420), there was a stronger desire to settle the new Proprietary plantation on Locke Island.

Why, then, was Locke Island not settled by Shaftesbury or other Proprietors? Why did Locke not immigrate to his personal island? These are questions that historians have spent little to no time trying to answer. The only reasons why Shaftesbury's plantation was not established on Locke Island stem from either unfriendly Indians on the island that prevented settlement, or possibly inaccurate maps of the coastline, and thus the island, so that when Percival landed on Locke Island they found it different than what was depicted and known (Fagg 1970:118). One main reason Locke Island has not garnered more scholarship is because historians know that 'Locke Island did not happen' and therefore, it is not worthy of true inquiry. Here, the "historians Achilles heel" strikes again: only the things that did happen are worth writing about, while the colonial plans that never came to fruition are not (Comaroff and Comaroff 1991); written plans were never enacted, while actions occurred through improvisation (Stoler 2002). Shaftesbury was intent on his own Carolina plantation. Locke must have been intent on doing something real with his island. In fact, out of 19 mapped islands between the Virginia and Florida borders (including the North Carolina Outer Banks) on the 1671 Ogilby map, the
only named island is Locke Island. Given this fact, it can be assumed that Locke had some intention for the island other than it simply bearing his name.

Other evidence suggests that Locke had intentions to not only live but plant, or become a husband of the land, in the colonies. In a letter addressed to Locke dated 28 May 1673, Proprietor Sir Peter Colleton gave advice to Locke that he should not bother himself with attempting to plant in the Bahamas Islands (De Beer 1976a:379-380, No. 270; Woolhouse 2007:110-111). Colleton made sure to mention that he was Locke's "partner in the Bahama trade which will turn to accompt if you meddle not with planting...I would neither have you nor my lord [Shaftesbury] ingadge in it" (De Beer 1976a:379-380, No. 270). The word "plant" as a verb in Old English meant "to put into the ground to grow" (Harper 2020), yet the word "plantation" was also used in reference to a whole colony (Harper 2020). When taking a strict settlement-oriented approach to Colleton's letter, it can be interpreted to mean that Locke may have wanted to start a plantation, or estate farm, in the Bahamas and be absentee, allowing agents and servants and/or slaves to run the venture—Locke would have "planted" people in the colony through his creation of an estate. However, I read this letter through the context of Shaftesbury's long family history in husbandry, orchard propagation and estate management paired with Locke's labor theory of property that placed improvement through agriculture as the true way to generate property in land, which makes the word "plant" refer to planting crops and raising a farm. The advice from Colleton, then, steered Locke away from the Bahamas to shore on Locke Island—it was his last option for land.

Inaccurate maps, potentially hostile natives, and Colleton's warning are the only bits of evidence or suggestions that offer reasons why Locke Island was not settled by
Shaftesbury or Locke. There is one factor that scholars have overlooked when questioning Locke Island and why it failed for both Locke and Shaftesbury, and the answer can be found if Locke Island is analyzed through property theory.

**LOCKE ISLAND'S LOST POTENTIAL THROUGH PROPERTY ANALYSIS**

Locke, as Landgrave, was entitled to 48,000 continuous acres. Shaftesbury, as Proprietor, was entitled to a 12,000-acre estate. Shaftesbury's instructions to Percival in May 1674 were to settle his estate on Locke Island (SP 2000:442). Assuming that Shaftesbury and Locke would have separate but neighboring properties, they needed at least 60,000 acres of continuous land. Sixty-thousand acres is 93.75 square miles of land. Today the total area of Edisto Island is 67.80 square miles. Edisto Island has succumbed to beach erosion through the twentieth century, but the island has not lost significant amounts of land to erosion—it surely has not lost 25.95 square miles in the last 300 years.

It is very likely that Shaftesbury's agents did not settle St Giles Kussoe on Locke Island because there simply was not enough land for both he and Locke to share. More so, 48,000 acres equals 75 square miles. At seven less square miles today, it is possible that there was barely enough land for just John Locke on his island. It is possible that Locke believed his success was dependent upon St Giles Kussoe's presence on his island, and if that plantation would not fit alongside Locke's acreage, then he may have begun to make different plans for what to do with his island, if anything at all. He may have thought of moving his acreage onto mainland. In either case, he still needed to comprise a theory of property that would guide the founding of St Giles Kussoe.
ATLANTEAN CONNECTIONS

Francis Bacon devoted most of his publications to the work of improvement; Samuel Hartlib's published tracts on improvement stem directly from Bacon (Webster 1970). The Royal Society of London, recognized at the time of its creation as the realization of "Salomon's House" in Bacon's New Atlantis (Spratt 1958 [1667]), was the first true location for testing experiments (Friedel 2007:165-166). The scientists and natural philosophers that occupied the halls of Salomon's House worked to spread their sciences and experimentation by way of agents throughout the known world, learn of any improvement methods and experiments in distant lands, and bring those newfound discoveries back to their House to master them and improve them through science for their benefit. As alluded to in Chapter 1, Shaftesbury as a metaphorical Salomon's House scientist through his adherence and practice within the improvement paradigm that gained order and strength through the Royal Society; Locke adopted the same rigor. Shaftesbury was not just a colonial overlord trying to mastermind Carolina for the good of the realm, nor was he simply interested in his own profits. He, and Locke alongside him, had different aspirations and motives for their colonial vision.

Shaftesbury wrote the governor of Jamaica, Sir Thomas Lynch, on 29 October 1672 about his prospects for the Bahamas (SP 2000:414-415). In the letter, he told Lynch that "I am now upon making myself a Plantation and intend to throw away some money in making some experiments there" (SP 2000:414, emphasis mine). A person could read this statement two ways: Shaftesbury was so wealthy he could throw money away on a colonial enterprise with disregard, or, the attempt of an experiment in a colonial setting was equal to a whimsical expenditure. Importantly, his statement embodied the privileged
voice of a Royal Society Fellow who had been living and working within the paradigm of improvement for decades. Shaftesbury pressed Lynch for the best pepper seeds and cocoa tree nuts available even though Shaftesbury admitted that the colder climate and poor soils of the Bahamas would likely have a detrimental effect. "However", Shaftesbury continued, "I am resolved to make the trial" (SP 2000:414-415).

Yes, Shaftesbury was extremely wealthy and could waste money on science experiments just to suit his interests and fancy. In light of this, Shaftesbury's words to Lynch are clear evidence of the Society's reality: most Fellows of the Society conducted their own experiments on their own properties because the goal was to push natural philosophy and the experimental method everywhere they could. Shaftesbury may have viewed his wealth as a vehicle to support the Society mission in ways other Fellows could not. If anything this letter is a statement from Shaftesbury that he was willing to do whatever it took to conduct experiments in colonial settings even if he suspected they would fail before they began because experimentation was the backbone of improvement, which could lead to success—success that could create a New Atlantis. Locke likely adopted this sentiment as well.

THE "ATLANTIS" NOTES IN CONTEXT WITH CAROLINA

When Locke left for France in December 1674, he began an extensive travel journal to record almost everything and anything he saw and did (Lough 1953a). Locke wrote notes through to his return to Shaftesbury's household summer 1679. Scattered throughout his three and a half years of entries are nine individual notations that bear the name "Atlantis." I consulted "Appendix B: ATLANTIS" in Helen Mary Pringle's dissertation (1986) for full transcriptions of the Atlantis notes. The scholars who have
studied these notes agree that the notes have a colonial context and directive, have a clear association with Carolina, and are, at best, weakly linked to Bacon's *New Atlantis* (De Marchi 1955; Goldie 2002:76; Hsueh 2008; Pringle 1986:300). However, there appears to be a contextual link between the *New Atlantis* and Locke's Atlantis notes.

Locked owned 19 of Bacon's publications including a 1664 edition of *The New Atlantis* (Harrison and Lastlett 1971:78). The 1664 date means that Locke most likely acquired his copy just before he departed Oxford in 1667 or after he joined Shaftesbury's household that year, so that he likely read it while already engaged with colonial work. In summary, the Atlantis notes outline the components and requirements for a hypothetical ideal society. In *The New Atlantis* (1627), Bacon defined Bensalem as a society governed and organized by natural philosophers. In similar fashion, Locke, as Royal Society Fellow, may have envisioned himself as a natural philosopher who was constructing an experimental social form for Carolina. The Society had a colonial agenda from as early as 1661 (Hunter 2007:14-16), so Locke's Atlantis notes on colonial improvement should not be viewed as random sketches. Also, by the time Locke went to France in November 1675, St Giles Kussoe was establishing itself as a working plantation on the Ashley River and not on Locke Island. Why, then, was Locke writing about an experimental form of colonial society if the prospects for his island were diminished by Shaftesbury's absence there? Because "the plantations in Carolina were quite prominent in Locke's mind" (Woolhouse 2007:122) and Locke pushed his intent towards Shaftesbury's plans.

Locke scholar De Marchi (1955:165, emphasis mine) believed that the Atlantis notes did not contain an "organic plan" for a society, "but rather the raw materials for such a plan" for a "well-ordered community." Regarding his management of Carolina,
Shaftesbury dealt with constant illegal trade and skirmishes between natives and his non-law abiding colonists, the steady desertion of servants, and the colonists' inability to ratify and accept the *Fundamental Constitutions*; by proxy, Locke dealt with those issues too. Even if only just 'raw materials,' Locke may have been working on an experimental form of social organization for not only his own Carolina estate and its future settled families, but as an aid for St Giles Kussoe and possibly even all of Carolina. Similarly, Locke's early work on his property theory during the 1670s was also in a 'raw materials' state.

Besides a clear Carolinian context to the Atlantis entries, there is a contextual link between some of the notes and Shaftesbury's agenda in the 1670s. Most of the five topics that De Marchi (1955:165) identifies as the basis for the Atlantis notes cover issues that Shaftesbury was actively engaging in England and Carolina. The first, "craftsmanship and organization of labor within the social framework" (De Marchi 1955:165), weighed heavily on the Proprietors' minds because they needed skilled laborers to manufacture products in their colony. Chapter 6 of this dissertation explains how St Giles Kussoe was created by engineering both the physical built environment and an experimental labor regime that changed how enslaved Africans and white indentured servants worked within a private property like St Giles Kussoe. It was Locke's *labor* theory of property that provided the basis for how labor within Shaftesbury's estate would be organized and employed, and what the expected outcomes of such labor would be.

The second theme is "how a police system should be set up in the cities" of the particular colony that is the subject of Locke's notes (De Marchi 1955:165). Two Atlantis entries discuss the compact between a specific number of 10 houses grouped together and the "titheing man" that was in charge of maintaining order for that community. A
"tithingman" was an elected peace officer in American colonies and stems from the Old English root "tithe" which meant "ten" (Harper 2020). Locke's notes on "titheing men" lists the rules visitors and strangers from other colonies should follow if residing in a 10-house community, and the duties of the titheing man to the residents and their wellbeing. Hsueh (2008:313) relates Locke's notes on the surveillance of foreigners by titheing men to the same kind of surveillance the stranded 'strangers' in Bensalem were subjected to while under the care of the scientists of Salomon's House. Locke wrote that the titheing man was to record the "name, age, description and manner of living in the last titheing where he [the visitor/stranger] lived and how long he dwelt there" (Pringle 1986:303). This should not be read as simple census information.

Visitors were expected to reveal what they did in their previous place of residence. If their work differed from local methods, the locals could observe the husbandry and industry of visitors to better the town. The improver, then, took the foreign information and expanded on it. Locke's Atlantis notes on the governance of colonial communities can be read as a conceptual framework for settlers on either his or Shaftesbury's properties, where the surveillance of both residents and visitors kept order and revealed potentially new and important information that could benefit the local community and colony. Lastly, the tithing men worked to keep the community safe and orderly, which was exactly what Shaftesbury needed in Carolina—safety and order.

Topic three is about "the social function of learning and its limits", topic four alludes to sumptuary laws, and the fifth topic covers aspects of population, marriage, disposition of the elderly and inheritance rights—all of which are portions of a theoretical social form (De Marchi 1955:165). Locke thought the sumptuary laws should be seen as "a
device to prevent waste and extravagant expenditure by the very rich, especially landowners" (De Marchi 1955:165). In 1675, Shaftesbury was embroiled in a struggle in Parliament defending the property rights of estate holders in rural English counties, like himself, against the over accumulation of private property by London-leaning aristocrats.

The fifth topic covers population regulation and marriage, specifically the age that both men and women should reach before wedding. Locke also set parameters for the kinds of assistance that elderly men should get when they reach a certain age; their public benefit was also dependent upon the number of offspring they had (Pringle 1986:301-304).

SPECIFIC CAROLINA REFERENCES IN THE ATLANTIS NOTES

Carolina seems to be the most likely location for Locke's theoretical society. The third Atlantis note dated 4 October 1677 actually references an important Carolinian: "Atlantis In all authentique acts to the name of the persons there in mentioned let them always be annexd the name of the place where he was inregistered viz ]: Mathews of Charlestown" (Pringle 1986:301). Hypothetically, Locke says Mathews should register with the local tithing man. While it is obvious that this note references Charles Towne, the name attached, "Mathews", was most likely Maurice Mathews, who was first assigned as the governor of St Giles Kussoe until Shaftesbury changed his mind at the last minute and replaced him with Andrew Percival (SP 2000:448). Mathews was a major surveyor for the colony during the 1670s, he surveyed the 12,000 acres that became St Giles Kussoe, and he later became an Indian trade agent for Sir Peter Colleton and conducted business with Shaftesbury's Indian trader, Henry Woodward (Agha et al. 2012). It seems clear that Locke did not choose a random name for his example. The last clear reference to Carolina is seen through an entry labeled "Carolina" made 20 February
1679, which explained the way Indians should be treated if they murdered colonists (Pringle 1986:303). Attached to the bottom of the "Carolina" note is an Atlantis heading and more description of tithing men and community safety.

When the Atlantis notes are read critically and prefaced through Locke's colonial work with Shaftesbury, the contextual links between those notes and The New Atlantis become stronger. The scientist-rulers of Bensalem referred to America as "Atlantis"—Shaftesbury and Locke worked to modernize all facets of Carolina through improvement in an effort to turn America into a "New Atlantis" based on natural philosophy.

LOCKE'S CREATION OF HIS PROPERTY THEORY FOR CAROLINA

Locke and Shaftesbury worked in tandem on their property ventures for Carolina. Although Locke never formally settled his Island, the place gained materiality through pen on paper, not people on land. Shaftesbury referenced it to colonial managers and agents in Carolina. Locke's map of his Island appeared in a royally sanctioned geography. And, Locke wrote about the place to his friends, some of whom he asked to live with him there. In a 6 June 1679 letter to his French colleague Nicholas Toinard, Locke said "I shall be yet more ready to accompany you [Toinard] to Carolina where there is a very fine island which they have done me the honor to name after me. There you can be emperor, for I can answer for it, that everything which bears the name of Locke is certain to obey you" (Fox-Bourne 1876:427). Toinard seemed to hold on to hope: he asked Locke in 1681 to "think seriously...of removing to Carolina, of which you have up till now spoken in a playful way as between friends" (De Beer 1976b:444, No. 660, translation in Woolhouse 2007:152).
Shaftesbury died in January 1682/3. Afterwards, Locke's interest and possibility in a Carolina venture seems to have ended. In a letter dated 4 May 1686, Locke gave his close friend and associate Edward Clarke details about his Landgraveship in Carolina, hoping Clarke would buy it (De Beer 1976c:1-3, No. 849). Activity at St Giles Kussoe fully ceased in May 1685 (Agha 2018:68). Locke was in exile in Holland during these years, so news about the plantation may not have reached him. He may have finally realized his connection to land in Carolina ended with Shaftesbury's death.

The following chapter is an explanation that Locke's labor theory of property was designed for use in the real world through its application in the setup of St Giles Kussoe. I draw evidence for this thesis from some of the items on the May 1674 list of books and identify specific passages from improvement manuals that may have been inspiration for foundational passages in Chapter 5 of Locke's Second Treatise. I posit that Locke drafted key provisions in his property theory alongside Shaftesbury's plans for the improvement of his plantation, and then Shaftesbury established his Carolina estate based on Locke's property provisions.
CHAPTER 5
THE MATERIALITY OF LOCKE'S LABOR THEORY OF PROPERTY

Shaftesbury was dismissed as Lord Chancellor on 9 November 1673, and later removed from the Privy Council on 19 May 1674—he never held office again (Milton 2011:160). He was still the leading Lords Proprietor of Carolina, and the letters concerning Carolina that he wrote after 19 May 1674 show that he shifted his attention and work, with fervor, from English government directly onto the colony (Haley 1968:364-365). As his letters demonstrate, a large part of Shaftesbury's colonial interest was directed towards his next plantation venture. Alongside him, also interested in his plans, was Locke. Shaftesbury coordinated his plans with Locke because the intended location for the plantation was Locke Island. While some scholars believe Locke and Shaftesbury were, on some levels, equals because they were friends, and while other scholars argue whether or not Locke was an employee and servant to Shaftesbury (Milton 2011), one fact remains: Locke was made Landgrave over 48,000 acres of Carolina and a large island on the coast was given his name. If Shaftesbury planned to settle 12,000 acres on Locke Island, it was Locke's private property nonetheless—even Shaftesbury had to respect Locke's property rights, regardless of his position over Locke.

Shaftesbury attended a meeting of the Hudson's Bay Company on 3 June 1674 and shortly afterward left London for Wimborne (Haley 1968:364; Marshall 1994:176). Later that month, Shaftesbury returned for a meeting at Exeter House on 29 June 1674 (Haley
1968:365), and a few days later, Shaftesbury left for the country and Locke most likely traveled there with him (Milton 2011:157 n. 20). Aside from what appears to have been day trips on horseback to Salisbury to see his Oxford mentor David Thomas on July 10 and 21, and again on August 13 (Locke 1674:23, 24, 25), Locke was at St Giles. After August 13, Locke's transactions and notes (1674:26, 27) seem to place him in Somerset with family presumably from mid-August through September. Locke was back at Exeter House by 1 October as evidenced through his notations of letters that were presented in meetings of the Council for Trade and Foreign Plantations (Sainsbury 1889:1301), and by the sale of the horse in London 9 October (Locke 1674:33); he mostly likely rode the horse from Somerset back to London. My interpreted calculations can place Locke in the country with Shaftesbury for 34 days.

In May while still at Exeter House, Locke drafted Shaftesbury's book list, which includes 54 titles. This dissertation argues that Shaftesbury used several of the listed books to help frame the plantation instructions he wrote on 23 May for Andrew Percival. Because Locke was at Exeter House in May 1674, it is quite possible that Locke played an active role in creating the book list. One can imagine both men in Shaftesbury's library, possibly several times in May, engaged in conversations about the colony, Locke Island, and Shaftesbury's plantation: their discussions together gave the 1674 book list its colonial character. Shaftesbury was ready to "throw away some money on making experiments" (SP 2000:414) through what would be the last colonial pursuit of his life. This chapter details how the 1674 book list is the materiality of the theory that would desing his plantation and help construct the walls of his colonial laboratory. That theory was Locke's labor theory of property, and this chapter unravels it through the book list.
THE LABOR BEHIND THE LABOR THEORY OF PROPERTY

St Giles Kussoe was not going to be just an experiment in husbandry, but an experiment in labor organization: Shaftesbury wanted to improve upon—modernize—the labor of enslaved Africans in his private colonial setting by forcing them to perform English science experiments upon his land. Otremba (2012:13, 17-21) mentions that historiographies on slavery generally do not "address questions about slavery's contribution towards modern scientific, economic, and political orders," nor do those studies identify plantation slavery as contemporaneous with the modern period. Otremba (2012) connects African slavery with early English modernity in the seventeenth century; Locke's theory connects labor and property together as interchangeable, which made it "a thoroughly modern conception" because the classical belief prior to Locke's theory was that "labour and property are incompatible" (Tully 1980:135). Shaftesbury modernized his colonial estate through Locke's theory, which intrinsically modernized the estate labor of enslaved Africans.

Shaftesbury wanted to establish a 12,000-acre colonial estate through principles based in labor and labor's product, the conservation of resources, and improved husbandry, not through avarice and entitlement. He would do this through the experiment of adopting Locke's property theory and materializing it through the transformation of his acreage into a built environment of Second Nature. Labor, its employment, and direction, allows the private property holder the ability to satisfy Locke's provisions. Locke's theory would define property through labor, and then Shaftesbury would find the right forms of labor to create and maintain that property.
While they were both private individuals, and while the true nature of their friendship or close relationship is debated (Milton 2011), when it came to the reality of their colonial property aspirations, they may have worked more closely at each other's side than from across the room, or even the table. The creation of the 1674 book list, the shared trip into the country in Shaftesbury's coach, and the more than one month of time together at Wimborne St Giles's house was an ample amount of time to work with the books, compare and contrast perspectives from different authors, consult both related and unrelated sources, and provide their own practical knowledge and lived experiences, in order to make sure that their work, together as Society Fellows, was going to be a set of experiments grounded in theory that would be both men's biggest scientific attempt of their lives. That attempt began with, and was planned through, conversations.

CONVERSATIONS AMONG GENTLEMEN

Lady Masham hosted Locke's retirement from 1691 until he died in 1704 (Woolhouse 2007). After Locke's death she recounted the time he and Shaftesbury spent together with exuberance and flair. She recalled that when Shaftesbury first met Locke, Shaftesbury "received him very civilly"; later over dinner, Shaftesbury was "much pleased, as it soon appeared, with his [Locke's] conversation" (Fox-Bourne 1876:141). In a dedicatory on Locke after he died, Locke's friend Peter Coste (1823 [1720]:165) mentioned that there was an "easiness, with which Mr. Locke knew how to converse with all sorts of men, and the pleasure he took in doing it, at first surprised those who had never talked with him before." Locke was so impressive that "one single conversation with that great man [Shaftesbury]" led to a long lasting relationship (Coste 1823 [1720]:165).
Some scholars believe that "Locke recommended the study of science for the sons of the English country gentlemen merely to provide them with something like intellectual hors d'oeuvres for polite party conversation" (Axtell 1991:419). While it is true Locke had a 'conversation club' at Exeter, actual discussions between people serve an important purpose and function—talking was more than an excuse for men to feel grandiose and show off their knowledge. Conversation was and still is a way for people to figure out solutions to problems and put their education and experiences to use to improve the situations in their lives, and to statesmen like Shaftesbury, the lives of others—colonists and English residents alike.

Coste (1823 [1720]:165) wrote that through Locke's "peculiar art in conversation" he was able "to lead people to talk of what they understood best. With a gardener he discoursed of gardening; with a jeweller, of a diamond; with a chemist, of chemistry, etc.." With Shaftesbury—a politician, colonial administrator, and improver—Locke discoursed on politics, colonialism and improvement. These conversations, then, may have helped both men: Shaftesbury invented ways to improve Carolina through estate development, and Locke's property theory began to crystallize. St Giles Kussoe was the location for Locke's theory to achieve materiality.

Haley (1968:219) made a comment about Shaftesbury, Locke and the 1674 book list that alludes directly to my thesis: "One must imagine that there were many informal conversations about such books as these, and that they had their share in influencing the development of the ideas later formulated in Locke's Two Treatises of Civil Government." With smart, sharp company like Shaftesbury to bounce ideas off of and gain new insight from, Locke may have used the power of discussion to make the ideas gel into a theory
that could not just be read well on paper, but written legibly on land. However, while Haley suggested "informal" conversations, discussions about Shaftesbury's plantation, and Locke's ideas about property, could be classified as formal, or even critical to the matters at hand in 1674. Part of those formal discussions revolved around books.

SHAFTESBURY, THE READER

Both Shaftesbury and Locke were consumers of books. Locke bought books for Shaftesbury, and the men lent and borrowed books from each other (Haley 1968:219; Harrison and Laslett 1971:2). Lady Masham (cited in Fox-Bourne 1876:142 n.2) recounted that Shaftesbury was someone who "had conversed with books a good deal" and "always understood more of the books he read from a cursory reading of them than most other men who dwelt longer upon them." In similar fashion, Coste (1823 [1720]:167) stated that

"though my Lord Shaftesbury had not spent much time in reading, nothing, in Mr. Locke's opinion, could be more just than the judgment he passed upon the books which fell into his hands. He presently saw through the design of a work, and without much heeding the words, which he ran over with vast rapidity, he immediately found whether the author was a master of his subject, and whether his reasonings were exact."

Masham's and Coste's quotes evoke the essence behind the creation of the 1674 book list. One can imagine both men standing in the library at Exeter House, pouring over the shelves, announcing this book or that book, and conversing on what items they each thought was worthy of making the list for transport to the countryside. Locke also had books in his room at Exeter House (Harrison and Laslett 1971:16) and the conversation may have carried between both shelves and rooms.
LOCKE'S POTENTIAL SOURCES FOR THE SECOND TREATISE

Laslett (1960:130-145) compiled a list of 90 books that he imagined most representative of the material Locke would have used for writing the Two Treatises. Laslett (1960:133-145) displayed the titles in relation to six distinct book inventory lists that Locke compiled: list numbers one and two were made in 1667 when Locke left Oxford; list three dates to c.1660, 1681 and 1682; list four dates to 1681; list five dates to 1689-91; and list six is Locke's 1694 final library catalog that is published in Harrison's and Laslett's (1971) guide to the library.

In the Two Treatises, Locke cited only six other writers by name and two other authors by the titles of their books (Laslett 1960:130); none correlate with the 1674 book list or improvement or husbandry manuals. The lack of citations complicates the ability to find the origin of Locke's labor theory of property through source material, but since the theory appears to have an agrarian orientation (Wood 1984) within the paradigm of improvement, parts of his theory lie within the improvement and husbandry tracts listed in the 1674 book list. Laslett (1960:133-145) did not include any improvement, garden-related, or husbandry manuals among his source list of 90 books for the Two Treatises. The May 1674 book list can be viewed as source material for Locke's Chapter 5 of the Second Treatise. If anything, my research into the May 1674 list shows it as a contribution to Laslett's work on potential sources for the Two Treatises.

THE MAY 1674 BOOK LIST

The May 1674 book list was written by Locke and was titled "A list of books which my Lord Shaftesbury carried into the country" (Haley 1968:218). I used photographs of the original document (PRO 30/24/5/278) that were taken by my colleague Suzannah
Fleming in September 2018 at the National Archives in London. Locke made almost all of the 54 entries by author's name followed by a descriptor word indicating the title; for some books he entered only the author's name. For instance, one entry in the book list reads "Dalton's Justice" and Shaftesbury's library lists "Dalton, Michael The country justice, London, 1643 4°".

The Shaftesbury library, an inventory currently published online at https://www.angam.phil.fau.de/fields/enst/lit/shaftesbury/reading-room/, was compiled from three inventories made by Peter Crell, the Third Earl of Shaftesbury's 'library keeper;’ the first list was compiled in 1708 and the other two in 1709. Due to this, some of the books or different editions on the May 1674 list may have been acquired by the Third Earl well after the First Earl's death in 1683. The Third Earl also kept two extensive book inventories that allowed for correction of the May 1674 list: 23 books he purchased while in Rotterdam in November 1687 (MS Locke c. 7, fol. 80r) and 167 titles bought in Holland both from 1698-1699 and 1703-1704 (TNA PRO 30/24/27/14). Specific editions of Terence's works that dated prior to 1674 were subtracted from the May 1674 list because they were the Third Earl's late acquisitions. No other books on the Third Earl's inventories are on the 1674 book list.

Due to the fact Locke lived in and had books at Shaftesbury's house, Locke's library as printed in Harrison and Laslett's The Library of John Locke (1971) was consulted. Five books from Locke's library, but not Shaftesbury's, are on the May 1674 list. Locke kept detailed records of the books he had while in France between November 1675 and May 1679 (Lough 1953b) and none of those books match the May 1674 list.
Locke organized the May 1674 book list into two columns (Table 5.1). Words in bold-face font within the fully-listed entries (Table 5.2) are the words that Locke wrote on the list (compare Tables 5.1 and 5.2 to see the correlation). When reading Table 5.1, it should become apparent that the minimal amount of information Locke wrote down shows that the list is not organized by topic. The first four entries are: "Johnston Animal"; "Pultons Statutes"; "Blome Geography"; and, "D Newcastle's method of dressing horses". The following 47 entries are equally randomized; on a few occasions books of like topics were entered next to each other. When the left-side of the list is read from top to bottom, it is apparent the books were listed by size from largest to smallest. The right-side column contains the smallest sized books of the list, but they are disorganized by size, which may have been due to how the books would fit into boxes or trunks for transport. The only listed item that is not a book or pamphlet is "Maps of England."

For the first 11 left-side entries, Locke added "fol" that denoted folio size for those books, and also an underlined two-digit number that represented the publication date, which was Locke's particular notation system he used in his personal books and catalog. If the publication date was 1636, he wrote an underlined 36; if the date was 1536, he marked 536. Although he began the list with folios, several more folio-sized books follow after his last notation and he did not continue writing dates, either.

Haley (1968:218-219) posits that the list represents "the obvious interests of the country gentleman": I posit that these books would also represent the interests of a country gentleman of an estate in Carolina. It is interesting, then, that so many books representative of country gentlemen were at Exeter House in the heart of urban London. The listed books would be more 'at home' in the countryside among Shaftesbury's vast
livestock ranges and miles of grain fields. Besides this notion, the books on the list comprise a bulky mass that had to be transported roughly 100 miles across the southern counties. All effort put into creating the list and moving the books was essential: the books held the plans for St Giles Kussoe.

**LOCKE'S INTERESTS IN IMPROVEMENT AND HUSBANDRY**

Locke also used these books in a foundational way: they provided inspiration and backing for his new ideas on private property. To Locke, "books were useful instruments of knowledge, never objects of aesthetic value" (Ashcraft 1969:47). Several books on the list are based on husbandry, fruit tree and orchard propagation, livestock care and breeding, gardening, and improvement—these books, following Ashcraft's position (1969), were not 'coffee-table books.' Neal Wood (1984) connects Locke's deep interest in husbandry and improvement to the basis of Locke's Chapter 5 in the *Second Treatise*. Wood (1984:41) explains that Locke linked the labor that creates property to certain kinds of laborers—specifically "farm laborers"—which further demonstrates Locke's improvement of property theory through the tie between laborer and land.

Furthermore, extensive research into Locke's activities has found that he "was far more involved in the botanical science of his day than has been previously known" because he avidly collected and shared seeds and plant cuttings, of which several varieties "ended up in the most important herbaria of the period" (Anstey and Harris 2006:151). His strongest connection to botany was through the Bobarts, who were keepers of the Botanic Garden at Oxford while Locke attended. Locke's interest in husbandry, gardening, orchards, and botany, played a role in his property theory.
Locke had an extensive library that totaled 3,641 titles by 1704 (Harrison and Laslett 1971:18). Harrison and Laslett sorted all of these books into 11 categories; however because these categories include publications printed in 1674 and after, Locke's library catalog was filtered to compile a pre-1674 list of books to help source and contextualize the 1674 book list. Neal Wood's (1984:26-28) discussion on the specific books Locke had on gardening, orchards, botany, husbandry and improvement was utilized, and thorough searches through the subject index in Harrison and Laslett's (1971:292-308) volume for Wood's references created an expanded list of pre-1674 texts.

Including 18 titles by Francis Bacon, and 28 titles by Boyle, a total of 115 books in Locke's library predate 1674 that collectively focus on natural philosophy and natural history; inventions, experimentation and improvement; flowers, vineyards, orchards, fruit and fruit trees; and, husbandry, livestock, farming activities, vegetables, functional gardens and botanic gardens through Europe. It is unknown when all 115 books were purchased; they were presumably bought possibly as early as the 1650s up to at least November 1675 when Locke left for France. Harrison and Laslett (1971:17) mention that when Locke returned from France in May 1679 he had between 500 and 600 books split between London and Oxford. Of course it is very possible Locke bought any number of these 115 books after he returned to London. At the very least, if all 115 books were acquired before November 1675, those books comprised between 19-23% of Locke's library. These 115 books support my thesis that he drew from husbandry and improvement literature to develop his property theory.
THE MAY 1674 BOOK LIST INTERPRETED

The 54 items on the list can be sorted into topics in multiple ways. Most of the books focus on a singular topic or theme. Some books on the list contain internal volumes that focus on specifically different topics, where topics like "raising vineyards" and "curing household ailments" appear in the same volume, while other books are edited compilations of earlier, shorter publications. All 53 book/pamphlet entries (excluding the "Maps of England") were read individually to learn the author's intent, their audience, and the exact topics discussed and detailed. Attention was paid to the ways each author talked about labor, how they used the words "improve" or "improvement," and if the authors used those words to mean physical alterations like turnip planting and plough development, or philosophical interactions with nature.

The use of the word "nature" in all 53 works was also scrutinized. Francis Bacon's early improvement writings seem to condone a certain form of violence against nature so that humans can benefit wholeheartedly from the earth (Merchant 2008). Bacon's work was highly influential to the growth and development of English improvement throughout the seventeenth century. Therefore, it was important to note the ways authors on the May 1674 book list used words that imply a form of mastery, conquering, or alteration of nature. Such phrases were read as the materiality of Second Nature, where the print material itself was translated onto land to create a built environment—a manufactured environment alien to, and separated from, its untouched surroundings. Locke employed specific language that can be interpreted through political ecology to be read as the construction of Second Nature.
Nineteen specific topics or qualities were defined that either a whole book or individual sections, or books within books, were devoted to (Figure 5.1). The topics stem from the books themselves and relate to Shaftesbury's political motivations in England and plantation plans in mind—topics like "wine/vines" and "livestock" relate to the plantation and "Popery" relates to religion in England. To keep topic variety to a minimum for better interpretations, similar categories were combined: book sections on kitchen gardens and herb gardens fell under "gardens" while sections or books based on fruit tree orchards and their products as well as other tree-related information fell under "orchards." Accordingly, "gardens" and "orchards" are combined into one topic.

Each of the 19 topics is attributable to 91 individual books or components within books. The books that contain the most topics are those on improvement and husbandry. The *Philosophical Transactions of the Royal Society* are listed under "science" and "philosophy/truth/wit" because, taken as a whole, the eight volumes for the years 1665, 1666, and 1668 to 1673 contain 100 issues, each with their own entries that collectively represent the status of natural philosophy as decided by the Society through the letters and reports the *Transactions* editor deemed worthy of publication. Although Locke was also a Fellow and had the same *Transactions* volumes as Shaftesbury, the published topics in the *Transactions* would have been most relevant to Shaftesbury for planning the experiments for his plantation: Locke likely looked at these with Shaftesbury and offered advice and opinion as a Society Fellow.

Lastly, the 19 topics were collapsed into seven broad categories so that each of the 54 listed items on the 1674 list can be classified topically as a stand-alone item (Figure
5.2). Improvement topics were of the highest priority when the book list is sorted into these seven categories.

The category of 'improvement' includes the topics Animals, Horses, Livestock, Improvement, Orchards/Gardens, Farming/Husbandry, Wine/Vines, and Gentlemen. The 'government' category includes the topics Government and Justices/Bailiffs/Laws/Statutes. The 'religion' category includes the topics Religion and Popery. The category 'history' mirrors the topic History. 'Philosophy' includes the topics Philosophy, Science and Latin. The 'travel' category includes only the topic Geography/Travel. Lastly, the category "England's Interest" derives from John Spurr's (2000) work on the decade of the 1670s. Spurr (2000:135) notes that when improvement was taken up by the Royal Society in the 1660s, it “became a weapon in the pursuit of England’s interest." More so, the Society worked to discover new ways to "streamline artisanal industries and to more thoroughly organize labor routines” for “national plenty and profit” (Otremba 2012:5-6). The pursuit of improving anything that could help 'England's interest' both abroad and at home instigated social elites to work to make the country and empire great. Therefore, the books and items that fall under the topics of Merchant/Accounting and Property were placed in the "England's Interest" category. The "Maps of England" fit into this category, due to the fact that maps in the 1670s were useful tools for gauging land value and improvement potentials (Spurr 2000).

SORTING OWNERSHIP OF THE 1674 BOOK LIST

As stated, both Shaftesbury's and Locke's early eighteenth century libraries were used to identify the entries on the May 1674 book list and attribute possible ownership. Due to the fact that both men shared and loaned each other books, it is of course
impossible to know whether a title listed in Locke's final library was originally Shaftesbury's book. Regardless, some interesting discrepancies are worth interpretation.

Five listed entries on the list in Locke's library are not in Shaftesbury's library:
Pulton's *Collection of all the Statutes now in use*; Collins's *Introduction to Merchant Accounts*; Fowler's *The principles and practices of Latitudinarians*; Harrington's *The Art of Lawegiving*; and Graevius's *Grallae*. Shaftesbury and Locke kept books at Exeter House at the same time. The books on the 1674 list were needed: they were going to be used and they served a purpose. Therefore, if a topic was desired, and Shaftesbury did not have a book on that topic, then it is plausible that Locke loaned one of his books to suit Shaftesbury's needs. Likewise, they both owned the same editions of Johnstonus's *Historia naturalis animalium* (1657), Taylor's *A collection of polemical and moral discourses* (1657), and Austen's *A Treatise of fruit-trees* (1657). They both had the same volumes of the *Philosophical Transactions of the Royal Society*, and had different editions of Huarte's *Examen de ingenios = The examination of mens wits* and Heresbachius's *Rei rusticae libri quatuor*. Lastly, several works by both Erasmus and Terentius were owned by both men, and since the 1674 book list displays only "Erasums" and "Terentius," it is impossible to specify the exact sources for these authors. The possibility that some of Locke's books were taken from Exeter House to Wimborne St Giles's house is critical to my interpretations concerning the construction of Locke's theory from the 1674 book list. The inclusion of Locke's books suggests that any book on the list could have been a source for Locke's theory.

One of the most interesting facts of the May 1674 book list is that six listed sources are not in either Shaftesbury's or Locke's libraries. Four are based on improvement:
Markham's *The Country Farmer* (1616), Gray's *The Compleat Horseman* (1639, 1651, 1656, or 1670), Evelyn's *The French Gardiner* (1658, 1669, or 1672) and Plat's *Garden of Eden* (1653 or 1660). While the topics may seem redundant to the list, these tracts had significance beyond their topics. John Evelyn was a founding member of the Royal Society in 1660 (De Beer 1955a:15) and was the person who suggested the Society's name (De Beer 1955b:306). Shaftesbury and John Evelyn were personally associated: Evelyn had a position on the Council for Trade and Foreign Plantations beginning in 1671 (Haley 1968:258), and Evelyn offered, unsuccessfully, his niece's hand in marriage to Shaftesbury's first son (Haley 1968:222). Shaftesbury owned three of Evelyn's most important improvement tracts: *Kalendarium hortense, or, The gard'ners almanac* (1673), two copies of the 1679 edition of *Sylva, or, A discourse of forest-trees...To which is annexed Pomona, an appendix concerning fuit-trees in relation to cider* (1679). Evelyn's *French Gardiner* was his translation of a French garden manual. Locke owned only Evelyn's *Fumifugium* [1661] (Harrison and Laslett 1971:132), which was about London's horrible air quality. It seems odd that a book like the *French Gardiner* would not be in either man's libraries when considering both had Evelyn's other works and several books on the topics. It is also odd that the Markham entry is not found in either library: Shaftesbury and Locke (Harrison and Laslett 1971:184) each owned two of Markham's books and all four are different titles. Four of Markham's works appear on the 1674 book list, including a possible manuscript copy of an unknown Markham title.

The other two missing books are Sheppard's *The Offices and Duties of Constables* (1641, 1652, 1654 or 1657) and Spinoza's *Lucii Antistii constantis de jure ecclesiasticorum liber singularis* (1665). It is possible that all six of these books were
given to Percival when he sailed for Carolina later in 1674. Three are on gardening, farming and planting—things Percival was tasked with for St Giles Kussoe. Since he was governor of St Giles Kussoe, and was to expect families to settle within the plantation, he may have needed Sheppard’s volume on the offices and duties of constables. With these six books, Percival may have had the texts he needed to properly employ labor at St Giles Kussoe, enforce and enact law and order for the plantation's residents and workers, conduct experimental husbandry on the land, care for horses and livestock, and keep religion close at hand.

LOCKE’S INFLUENCE ON THE BOOK LIST

Locke appears to have contributed five books to Shaftesbury's 54-item collection (Table 5.3). Although it was only five, Locke may have suggested to Shaftesbury that ne needed to add them to the list because they contained important information he required for the task at hand: planning the plantation. When looking at Table 5.3, the first five of the seven organizational categories (listed by order of appearance on the 1674 list) are headed by either books Locke owned (n=2, green highlighting), or books for which each person had the same edition (n=3, yellow highlighting). Since Shaftesbury and Locke probably had several conversations while pulling books for the list, they most likely created topical categories and grouped similar books together. Is it possible that Locke then placed his few books at the tops of most of the stacks? Is it possible that Locke contributed many ideas that influenced the selections Shaftesbury made for the list? The answer to both questions can be yes.

The 1674 list is organized by book size, not by topic or author's name. Locke organized his books by size to maximize space, so that on a random shelf or in a box, a
book on geography could sit between books on English history and chemistry (Harrison and Laslett 1971:34-35). He kept track of books through a numbering system and log book. It can be suggested that Locke chose how to list the May 1674 books, organize them, and figure out how to pack them efficiently for the 100-mile trip from Exeter House to St Giles. Paired with his work on the collection and that some of the books that can be attributed to Locke appear, categorically, first in the list raises the possibility that Locke may have played more of an influence on the creation of this list than he has been credited. Locke’s influence on the list, made visible through this analysis, can be interpreted to mean that he wanted to use the books on the list for his own work. Through the list, work on property and plantations could begin as a dual effort between both men.

Shaftesbury hired Andrew Percival in April 1674 and Percival spent May and part of June outfitting Shaftesbury’s personal ship, a converted Dutch vessel called a dogger that was fittingly named the Edisto, with servants and supplies for the plantation (Percival Account 1680). To be hired, Percival was most certainly with Shaftesbury in April, and was again with Shaftesbury to receive his plantation instructions on or after 23 May 1674. Shaftesbury, Percival and Locke likely had discussions at Exeter House about the plantation and its settlement on Locke Island; the books probably comprised the fourth entity ‘speaking’ in the room. After a review of the Shaftesbury library, he owned 24 improvement and husbandry tracts published before 1674. Nineteen of those were at Exeter House and were logged into the May 1674 list; the other five may have been at Exeter House and not taken to the country, were already in the country, or were not yet acquired. Percival, therefore, had a large set of books to consult.
Locke's provisions would have provided Percival with a bare-bones template to guide the creation of the plantation. Locke had time summer 1674 to continue working on both his theory and the material on the book list. In order to understand how Locke's theory provided the basis for a 12,000-acre landed estate, an understanding of the theory is required.

LOCKE'S LABOR THEORY OF PROPERTY

Locke (II, §27) stated that the first property a person can obtain or claim a right to is the property held within their very self: "every Man has a Property in his own Person. This no Body has any Right to but himself." Following this claim, the "Labour of his Body, and the Work of his Hands, we may say, are properly his" (II, §27). No one has a right to your own labor but you. Labor can then be personally directed to take from God’s gift of nature, or the abundant common of the earth, so that a person can eat and sustain their life. Stemming from Biblical creation, Locke said that God gave the world to all people in common (II, §26, 34).

God’s children, who all began as commoners, could cooperate to take exactly what each individual needed for their daily survival, and for the survival of their families, which can be interpreted as a form of primitive communism (II, §25, 28; Laslett 1960:304, n. 6-8). This is how the common, or the entire Earth, was originally utilized prior to the creation of personal, private property. When God first made humans, they all lived in the state of nature and not under civil society. Locke (II, §34) said God’s intention was for the earth to not remain “common and uncultivated.” Instead, a person uses labor to take naturally occurring things from nature, like the "Fish any one catches in the Ocean, that great and still remaining Common of Mankind" or "the Hare that any one
is Hunting...has thereby removed" these things "from the state of Nature...and hath begun a Property" in them to have food, drink, shelter and the other requirements of life (II, §30, emphasis original). The fact that fruit and animals "are produced by the spontaneous hand of Nature" to lie in common allowed Locke (II, §26) to posit common sense logic that "there must of necessity be a means to appropriate" naturally occurring things in "some way or other before they can be of any use."

Once a person collected apples and nuts from trees, those things were the sole property of the collector as long as the trees and ground below them was in the commons. By doing so, the collector altered the state of the object; they have removed a part of the common from the common for some use other than it naturally remaining in the common. This is the first step towards the justification for acquiring private property. This also starts the conversion of First Nature into Second Nature, where the Biblical common that God gave to humankind was altered through human labor into something else: products derived from industry.

Locke (II, §32, emphasis original) then proclaimed that “the chief matter of Property" was "not the Fruits of the Earth, and the Beasts that subsist on it, but the Earth it self.” Land was the most important property form to Locke. When a piece of land becomes property, the beasts and fruit that naturally occur on the land are folded into the landed property (II, §32). Locke (II, §32, emphasis original) followed these assertions with a statement that is central to my dissertation thesis: “As much Land as a Man Tills, Plants, Improves, Cultivates, and can use the Product of, so much is his Property. He by his Labor does, as it were, inclose it from the Common.” Here, the act of enclosing land to claim it as property is a form of labor, and the tilling, planting, improving and
cultivation of land helps the laboring encloser strengthen their claim right to the property. The only way a person can take advantage of the bountiful nature God gave them is to enclose it for cultivation and use; if they fail to do this, they fail in God's eyes.

This is the basis of Locke's property theory. When taken at face value, this theory can lead to unlimited, unadulterated property appropriation and accumulation that can easily upset the balance of available land for other commoners to enclose and improve. Chapter 3 of this dissertation explains how changes in common law instigated elites to enclose large expanses of commons to expand their estates. Therefore, to prevent unlimited accumulation, Locke embedded clauses, or provisions, into his theory to keep the creator of new private property in land, and those already in control of estates, morally and ethically responsible to not only their own land, but to the commons and wasteland outside of their enclosure.

The reader should remember that in the seventeenth century, enclosure was warranted if the land to enclose was either commons or ‘wasteland’ (Grove 1981; Ince 2011; Shannon 2011; Slack 2015; Warde 2011). Francis Bacon believed that improvement was boundless (Friedel 2007:164); landlords who employed improvement grew in wealth and power, which allowed them to appropriate more and more common and waste. Therefore, Locke’s provisions prevent the unwarranted and immoral unlimited accumulation of commons and wastes for everyone, regardless of social status (Sreenivasan 1995). Through a struggle in parliament during the latter half of 1675, Shaftesbury defended the property rights of country gentlemen like himself against the land-hording aristocracy (Haley 1968:372-393): Locke's provisions represent the mindset of the responsible, modern country gentlemen, not the antiquated aristocracy.
In the following section, passages from items on the 1674 book list are linked to the overall thesis of Locke's theory. Afterwards, Locke's three provisions are detailed separately and passages from items on the 1674 book list are linked to each provision.

LOCKE'S THEORY FROM THE MAY 1674 BOOK LIST ENTRIES

One of the five books on the 1674 list that was Locke's book and not Shaftesbury's is James Harrington's *The Art of Lawegiving* (1659). Laslett (1960:138) lists Harrington's *Oceana* among the 90 likely sources used to write the *Two Treatises*, but not *Lawegiving*. However, in the notes for *Oceana*, Laslett (1960:138) includes a mention from Locke's journal that Shaftesbury read *Lawegiving* in 1674. Locke's mention of Shaftesbury's reading of *Lawegiving* is a suggestion that it was a loaned book from Locke, and that the book was useful in some way for St Giles Kussoe. The book appears to have also been useful to Locke for his theory.

In his introduction, Harrington (1659:6) reminded his reader that God gave the earth to all humankind, but the gift did not come without a price: In the sweat of thy face shalt thou eat bread, Genesis 3:19. Locke (II, §32) restated this exact sentiment: "God, when he gave the World in common to all Mankind, commanded Man also to labour, and the penury of his Condition required it of him." Labor on land was humankind's punishment for their original sin; it was the outcome of the Fall from Paradise (Almond 1999; Hill 1993; Seed 1995). Harrington (1659:6) claimed that "The Donation of the earth by God unto man, cometh unto a kind of selling it for industry, a treasure which seemeth to purchase of God." Put simply, humans paid for the "treasure" of the earth with their industry, or labor.
Locke also claimed that mental labor, "Inventions and Arts" (II, §44), and labor that was not necessarily the "Pains" and "Toil" of threshers and ploughmen (II, §43) was labor enough to create property from nature. Locke may echo Harrington's *Lawegiving* (1659:6): “from the different kinds and successes of this industry, whether in arms, or in other exercise of the mind or body, deriveth the natural equity of dominion or propriety.” Harrington used the word “industry” instead of labor, and alluded to various forms and levels of success that came from multiple kinds of labor. Next, Harrington said that labor can be “in arms”, which is interpreted as the use of a person’s hands, and “other exercise of the mind or body” meaning mental labor and other forms of human labor not including use of arms—actions like threshing wheat or plowing land. From the labor of a person's hands, body and mind comes property.

*Oceana* (1656) is commonly attributed as a major influence behind the *Fundamental Constitutions of Carolina* and the "Grand Modell" of Carolina's government and settlement (Lesser 1995:129; Weir 1983:54; Wilson 2016). Harrington's *The Art of Lawegiving* (1659) is not. Yet, it may have served as an influence for how Percival was to enact the *Constitutions* at Shaftesbury's plantation and how he was to issue property, laws and order to families willing to live within the plantation's borders (SP 2000:439-445). This book, then, may have served both Shaftesbury and Locke in their practical and theoretical work on the plantation.

The connections between Locke's theory and husbandry and improvement can also be seen in Gervase Markham's *The English Husbandman* (1635). This book was one of four works by Markham on the 1674 list. The 1635 edition is a compilation of two shorter books that were published in 1615 and 1616 respectively. Markham titled Chapter
"What a Husbandman is: His Vitality and Necessity," and promptly defined a husbandman: “A Husbandman is the Master of the earth, turning sterility and barrenness into fruitfulness and increase” (Markham 1635:3). The labor of the husbandman also upholds and maintains a commonwealth: “To conclude, what can we say in this world is profitable where Husbandry is wanting, it being the great Nerve and Sinew which holdeth together all joints of a Monarchy?” (Markham 1635:4). Here, Markham's description of husbandry seems to foreshadow the mission of the soon-to-be Royal Society.

Russell (2004) defines Locke's labor as not hard or toilsome labor, but directive by way of intent, planning, and speculating. Locke (II, §44) wrote that the labor of both body and mind can create property. Markham, too, believed that labor consisted in various forms, and he did not place one kind of exertion over another. First and foremost "there is nothing more requisite in a Husbandman, then acquaintance with labour and abilitie to endure labour...let our Husbandman then know labour, and apply himself to labour" (Markham 1635:5). Markham (1635:5) did "not meane servile and painefull labour, which shall either disable the body or torment the minde" only, but instead "the labour of his eyes in visiting and beholding his affaires, in apprehending the good and evil actions of his Servants, in finding out wants, and repairing them, and shewing to others what they ought to performe in their severall places." He then defined the husbandman's labor as "the labour of his hands" that distributed goods and needs to others, as assistance and encouragement, and the practice of restraint "or detaining things lavish or misapplied"; as the "labour of his feet, in walking about his Pastures, Meadowes, Woods, Commons, and Tillage" in order to know the area of those spaces "which leades to the assured knowledge of profit" and allows the husbandman the chance
to catch problems before they get too bad; and as "the labour of the minde" that can both manage current affairs and forecast future events (Markham 1635:5).

Markham made labor be more than just hard physical labor: it was management, planning, prospecting, correction, distribution, measuring—directive. The point is that Shaftesbury, while colonial overlord, was laboring on a grand scale: he employed servants and laborers in England and America, managed dozens of renters across multiple properties, worked on and headed numerous state councils, managed the kingdom's finances, and headed the Proprietary effort that controlled Carolina. Even though he did not wield a plough at St Giles Kussoe, he labored intensively for his property. The creation of property is not just physical labor. It can be the plan to do something physical to a thing so that it can become property. Elites, not just the subaltern laborers below them, labored to create their property.

Shaftesbury had the third edition of Walter Blith's *The English Improver Improved* (1652) in his library. Blith published the first edition, titled more simply *The English Improver*, in 1649, which was the same year Samuel Hartlib's influence was first felt at Oxford (Warde 2011:139). The third edition surpassed all other previous publications on improvement and agriculture (Warde 2011:140). Blith wrote in a "plain language intelligible to working farmers but in a style which might impress a sophisticated audience that was reading the *Philosophical Transactions* and Thomas Sprat's *History of the Royal Society" that was published in 1667 (Slack 2015:114). Shaftesbury and Locke both owned Sprat's history, and the *Transactions* and *English Improver Improved* were noted on the 1674 list; the diversity of the list was a blend of sophisticated and practical works to educate elite and yeoman alike.
In his *Improver Improved*, Blith (1652:191-192) taught a lesson about ploughs that may have influenced Locke’s unraveling of the labor that went into the products labor manufactured from nature. Blith identified and listed three abuses, or improper practices, commonly associated with ploughs. The first abuse was committed by the blacksmith. Blith clearly states that the quality of the plough blade should be dependent upon the kind of land that needs plowing: if the metal is not strong enough, the plough blade is worthless. The second abuse was committed by the plough-maker. Blith pointed out that the plough-maker only made ploughs and was not actually using them to break ground. The third and last abuse was committed by the unskilled ploughman. Blith stated that if the plough was used improperly, and the ploughman was not keen on the quality of the blade and manufacture of his tool, he would misuse it and not change the land as needed, and eventually damage or destroy the plough from ignorance of its quality and use.

The ploughman, then, could calculate the quality, thus the value, of their tool based on the kind of labor that went into the manufacture of the plough. If the plough-maker used ploughs, their labor on the plough would give them information that help them make better ploughs. Here, the plough-maker's labor gives the plough more value because they improved it through better information gained through labor. Blith's argument can be read into Locke's argument about the value of labor.

Locke (II, §43, emphasis original) attempted to explain the value of a product through the cumulative kinds of labor that made it, but that a full list of all form of labor "'Twould be a strange Catalogue of things, that Industry provided and made use of, about every Loaf of Bread, before it came to our use, if we could trace them". In regards to all of the industry involved in the production of a loaf of bread, Locke (II, §43, emphasis
original) reminds the reader that it is "not barely the Plough-man's Pains, the Reaper's and Thresher's Toil, and the Bakers Sweat, is to be counted into the Bread we eat" but also "the Labour of those who broke the Oxen, who digged and wrought the Iron and Stones, who felled and framed the Timber imperial about the Plough, Mill, [and] Oven." Locke was simply reminding the reader that all of these different labor forms and natural products were combined and utilized in the making of a loaf of bread, but that we should not try to account for all of those qualities when estimating the value a loaf of bread. For Locke, his concern was telling the reader that the value of a loaf of bread contains the value of all the labor from all the laborers in the 'bread loaf' production chain. Blith discussed a similar case, but instead he told the ploughman to be aware of the production chain and to harness it to their advantage to maximize the profits proper plowing would bring. Locke may have adopted the plough warnings from Blith as a literary method to get his point across about the value of labor that constitutes a product.

LIMITATIONS TO LOCKE'S PROPERTY

Debate over whether or not Locke's labor theory of property justified the onset of capitalism has been discussed (Bell et al. 2004; Lustig 1991; Tully 1980; Wood 1984). Kennedy (2008:133) identifies Locke's Chapter 5 as "what is in effect a capitalist theory of landed property." Locke was the first person in the seventeenth century to lay out the case for an individual right of unlimited appropriation (MacPherson 1978:13). However, Locke buried provisions within his theory to prevent the unlimited appropriation of land (Bell et al. 2004; Shrader-Frechette 1993; Sreenivasan 1995).
THE "ENOUGH, AND AS GOOD" PROVISION

To reiterate, Locke’s theory states that if a person joins their labor with something and removes it “out of the State that Nature hath provided” then that thing becomes their property (II, §27). Because labor was used to first change the natural thing, and then used to remove it from its natural state, that act of removal “excludes the common right of other Men” (II, §27). However, Locke devised a solution to this problem: “no Man but he can have a right to what that is once joined to, at least where there is enough, and as good left in common for others” (II, §27, emphasis mine). Shortly after this statement, Locke defined land as his primary focus of property and again stated that whoever labors to create property in land apart from the common must obey God and be mindful they do not annex something that someone else had a title to (II, §32). Locke followed (II, §33, emphasis original): "Nor was this appropriation of any parcel of Land, by improving it, any prejudice to any other Man, since there was still enough, and as good left; and more than the yet unprovided could use." Taking this idea further, Locke (II, §36) alluded to the fact that if a laboring person just took a small piece of land, then it would be impossible for that person to "intrench upon the right of another" or acquire a property "to the Prejudice of his Neighbour, who would still have room, for as good, and as large a Possession (after the other had taken out his) as before it was appropriated."

In summary, if Locke's "enough, and as good" provision is followed by the private property owner, then "in effect, there was never the less left for others because of his inclosure for himself. For he that leaves as much as another can make use of, does as good as take nothing at all" (II, §33). The responsible, moral and mindful enclosure of the right amount of land leaves enough land of the same quality for others to utilize through
enclosure and improvement. This clause, then, scolds the would-be capitalist accumulator of land and resources. Although capitalism grew in spite of Locke's provision, Locke tried to prevent such growth.

In the *English Improver Improved* (1652), Walter Blith is explicit in his reverence for improvement and its ability to bring about a greater bounty than England had ever known. In his Epistle Dedicatory, he lists the prejudices against improvement that he hopes his book will remedy. His fourth prejudice on the overuse of the commons by landlords of private properties echoes Locke’s sentiment to leave “enough, and as good” for those outside the private properties of lords. Blith (1652:B2) calls this prejudice "Unlimited Commons, or Commoning without stint...This is a great Prejudice to many poor men, both Cottiers and Land-Holders, who have not of their own to stock their Commons." Blith was referring to landlords running their livestock in high numbers throughout the heaths, moors, forests and other common lands that were used by Commoners. The landlord’s flocks and herds grossly outnumbered the Commoners’ livestock, which usually resulted in the loss of Commoners’ stocks (1652:B2). While not explicitly the "enough, and as good” clause, Blith argued that the landlords that used the commons in such ways were ruining the land and preventing others from taking advantage of potentially good land. Once land was enclosed, the private property holder should improve the interior of the close, not destroy the land outside of it regardless if it was wasteland or not.

**THE "SPOILAGE LIMITATION" PROVISION**

The “spoilage limitation” simply states that if a person encloses land, and if naturally occurring apple orchards preexist within the enclosed land, and the encloser does not
collect the fruit but lets it go to rot, then the encloser should have taken up only as much orchard as they have use for or avoid the orchard altogether. "As much as one can make use of to any advantage of life before it spoils; so much he may by his labour fix a Property in. Whatever is beyond this, is more than his share, and belongs to others" (II, §31). The enclosure kept commoners out of private property—it also prevented them from turning naturally occurring surplus, like an abundance of apple trees that supersede the use of just one landlord, into needed food. The enclosure itself, however, was spared from the spoilage limitation: "But if the Grass of his Inclosure rotted on the Ground, or the Fruit of his planting perished without gathering, and laying up, this part of the Earth, notwithstanding his Inclosure, was still to be looked on as Waste, and might be the Possession of any other" (II, §38, emphasis mine). Here, the encloser had prerogative to do what they wanted with land inside the enclosure, but according to Locke, they did not have license to let good grass and food go to waste; and, everything except the enclosure itself—the hedge, berm and accompanying ditches—should be identified as wasteland.

The 1674 book list contains few references that can be directly aligned with Locke's spoilage limitation. Rather, the sources offer information that can be used to practically avoid spoilage. Locke may have read the methods and techniques and saw ample evidence for ways the industrious husbandman could put surplus to use and not waste resources. The Philosophical Transactions for the years in the 1674 book list contain three articles on cider production from various fruit trees, three articles on grafting pears, apples and citrus trees, and 12 articles on tapping trees for sap. Six major works on the 1674 list also contain exhaustive information on fruit trees including transplanting, grafting, and other experiments, as well as ways to process fruit into useful products.
through canning, drying, and distillation into spirits (Austen 1657; Cato et al. 1595; Evelyn 1658; Markham 1616; Parkinson 1629; Plat 1653). The third book within Markham's *Country Farmer* (1616) consists of 88 chapters devoted to orchard propagation, care, planting and harvesting. Shaftesbury was personally involved in grafting numerous varieties of fruit trees for decades, and he made high quality cider from apples that helped him become a Fellow of the Society—he had 74 different varieties of apple trees at Wimborne between 1675 and 1682, and he listed 20 of those varieties as cider apples (Fleming 2007; PRO 30/24/5/293).

Locke may have taken cues from these publications and Shaftesbury's own experience when he devised the spoilage limitation: if an outlay of labor could work a surplus of fruit trees in a property, where some or most of those trees could be in experimental stages while appearing to the layperson outside the enclosure as trees going to waste, then the improver inside may need years before the trees come to turn. Since Locke was constructing his theory to be used at Locke Island for Shaftesbury's plantation, it is possible Locke devised the spoilage limitation and then Shaftesbury could justify his property through experimentation on trees for sap, fruit and cider products—the books were useful information on how to avoid spoilage.

THE "INDUSTRY PROVISION"

Besides letting apples rot or acorns go uncollected, there is another component within the spoilage limitation that revolves around the amount of labor a person controls within their property. Simply put, land should not be enclosed if there is not ample labor to work and improve all of the enclosed land (Arneil 1994:606; Bishop 1997:315; Ince 2011:43). Bishop (1997:315) refers to "an implied limit" to the land a person can turn
into property, especially if they cannot "productively cultivate" all of it. Beginning in the 1530s the word 'industry' meant "habitual diligence, effort" and later after the 1610s it meant "systematic work" (Harper 2020). Locke made sure to state that God did not give the world in common to just anyone: “He gave it to the use of the Industrious and Rational, (and Labor was to be his title to it)” (II, §34, emphasis original). Locke (II, §34, emphasis mine) scolded the property owner who "desired the benefit of another's Pains, which he had no right to," and who also enclosed land "whereof there was as good left...and more than he knew what to do with, or his Industry could reach to." Locke (II, §46) reiterated this crucial point later: "everyone had a Right...to as much as he could use, and had a Property in all that he could affect with his Labour: all that his Industry could extend to." The encloser, then, should not enclose land haphazardly with no plan, and should not take land if they did not have enough labor to work all of it.

Locke’s 'industry provision' may have gained inspiration and grounding from Markham's *The Country Farm* (1616). In Chapter 5 of the first book, entitled "The building and inclosing of our Country Farm”, Markham (1616:13) taught the reader to be mindful of the size of their holdings in ways that foreshadow Locke’s 'industry provision': a lot of land enclosed does not equate a successful farm. Markham (1616:13) warned the farmer “for as great cages make the birds never a wit the better, even so it is not so safe and sure a course to have a costly and large building upon the ground, neither yet to have so fair and large fields, neither yet so great quantity of grounds” because having so much land likely meant that “they must be either all ill husbanded, or else if for the careful tilling of one part of them, all the rest be left and let go untilled.” The 'industry provision' clearly echoes Markham's statement.
Markham (1616:13) also warned the reader to not “covet so greedily, or aspire to possess other great and stately farms, when he is not able to husband and till that which he hath already in his possession.” Likewise, Locke (II, §34) believed that the title to property, labor, should not be given to the "Fancy or Covetousness of the Quarrlesom and Contentious.” Furthermore: "He that had as good left for his Improvement, as was already taken up, needed not complain, ought not to meddle with what was already improved by another's Labour" (II, §34). First Markham, and then Locke, said the same thing to their audience: work and improve your own enclosed land first, then worry about what is outside later. Once things, like acorns or apples, were collected, the owner "was only to look that he used them before they spoiled; else he took more than his share, and robb'd others. And indeed it was a foolish thing, as well as dishonest, to hoard up more than he could make use of" (II, §46). Markham's books, as well as others on the 1674 list, instruct the reader how to make use of dozens of naturally occurring things, so that the owner does not need to hoard or stockpile an unusable surplus.

THE LANGUAGE LOCKE USED IN HIS THEORY

Francis Bacon wrote about the need to conduct experiments on nature so that nature could be used to help humanity prosper. While useful and important, his use of words and metaphor to "define a new method of gaining truth about the natural world" can be interpreted as forms of violence (Merchant 2008; Pesic 2014). Specifically, forms of violence against nature in order to make nature reveal its secrets and internal mysteries: to get nature to 'talk,' "hammering, molding, squeezing, and shaping nature under the constraint of tools and technological impediments" within a "contained, controlled experiment" is required (Merchant 2008:748). Merchant (2008:748-749) lists 24 different
terms that Bacon used in context with controlled experiments that "all connote some degree of violence toward nature": torment, transmute, torture, vex, hound, constrain, confine, change, constrict, capture, disclose, extract, mold, penetrate, shake, shape, squeeze, straiten, struggle, wrest, wrestle, and, the words most important to my interpretations of Locke's theory, alter, conquer and subdue.

Bacon believed that people needed to work harder, or apply more effort through the arts, in their manipulation of nature if they ever hoped to truly learn nature's secrets and derive its most useful assistance. As Bacon stated in *Novum Organum*, Book 2 of *De Augmentis Scientarium* (Spedding et al. 1863 [1623]:410), there is a "more subtle error which has crept into the human mind; namely, that of considering art as merely an assistant to nature, having the power indeed to finish what nature has begun, to correct her when lapsing into error, or to set her free when in bondage" but unfortunately, their weak use of the arts is unable to "change, transmute, or fundamentally alter nature." In an earlier translation of the same passage, the same weak use of the arts is unable to "alter, transmute, or shake it [nature] in the foundations" (Wats 1640 [1605]:80). In the *Advancement of Learning* (Wats 1640 [1605]:225), Bacon stated that "apt and proper assistances may be acquired; and applied" so that "men may subdue the difficulties of things, and the obscurity of Nature." Bacon (Wats 1640 [1605]:43) even referenced Jesus, who "shewed his power to subdue Nature, by his great and so many Miracles." Carolyn Merchant (2008:749) points out that, for Bacon, the new technologies that would actually alter nature would not "merely exert a gentle guidance over nature's course, they have the power to conquer and subdue her, to shake her to her foundations" (Bacon *Cogitata et Visa* [1607] in Farrington, tr. 1964:93). Lastly, in his interpretation of a Classical myth,
Ericthonius; or Imposture, in De Sapientia Veterum [The Wisdom of the Ancients] (Spedding et al. 1864 [1609]:132), Bacon wrote that "Art...endeavours by much vexing of bodies to force Nature to its will and conquer and subdue her."

In his property theory, Locke (II, §43) explained that the alteration of land through mechanical arts—tilling, planting, cultivating—improved that land into private property and gave it real value, because without labor, "Nature and the Earth furnished only the almost worthless Materials, as in themselves." Bacon's concept of the "contained, controlled experiment" is the improvement of nature within the confines and safety of an enclosure. The private property spawned from these two concepts can be interpreted as a form of "estate laboratory" where the dominion over an unaltered nature that was subdued and mastered through the heavy use of implements and improved through invention and the arts created forms of altered—Second—nature.

SUBDUE, CONQUER, ALTER, IMPROVE

As I have strongly suggested, Locke's theory can be derivative of the paradigm of improvement. That paradigm, however, was partly grounded in a literary tradition that labeled nature as feminine, old fashioned, traditional and customary (Agarwal 1998; Bauman and Briggs 2003; Merchant 2008). To become modern, those qualities of nature had to be swept away, and my position is that through the Royal Society, itself a catalyst of modernity, improvement was the broom. Even though scholarship has tried to show that Bacon's tone was not as harsh and damming against nature as it seems (Merchant 2008; Pesic 2014), his repeated and varied use of mostly derogatory terms used to describe actions upon nature demonstrates clear links between the domination of nature and Locke's creation of property.
The primary word Locke used to describe the action involved in the creation of property was 'subdue.' Locke (II, §32) said: "God and his Reason commanded him to subdue the Earth, i.e. improve it for the benefit of Life, and therein lay out something upon it that was his own, his labour." Locke (II, §32) then wrote that the person obedient to God's command "subdued, tilled and sowed" the land, thereby the person mixed their property—their labor—with the land, which turned the land into property. This paragraph is important because Locke connected the word 'subdue' to the improving, tilling and sowing of land, where earlier in the paragraph he said that tilling, planting, improving and cultivating land turned it into property.

Next, Locke (II, §35, emphasis original) wrote that "subduing or cultivating the Earth, and having Dominion, we see are joyned together. The one gave Title to the other. So that God, by commanding to subdue, gave Authority so far to appropriate." After this statement, Locke (II, §36) evoked the 'Industry Provision' and reminded his reader that the "Extent of Mens Labour" had set "the measure of Property" because "No Mans Labour could subdue, or appropriate all." To appropriate was to "take possession of" (Harper 2020); therefore, the act of subduing, or, agriculture, created private property. Locke's provisions worked to prevent unlimited appropriation of land and resources: God's order to subdue the earth was an order to organize it through labor into properties.

Bacon said that the alteration of nature gave it freedom. Locke said that the alteration of nature turned it into property. The person who "employed his Pains about any of the spontaneous Products of Nature, as any way to alter them, from the state which Nature put them in" turned those products into their property through their "Pains" or their labor (II, §37). Later in his chapter, Locke tied the alteration of nature into property
through the 'Industry Provision.' Related to that provision, Locke (II, §37) wrote that "every one had a Right...to as much as he could use, and had a Property in all that he could affect with his Labour: all that his Industry could extend to, to alter from the State Nature had put it in, was his." The alteration of nature and the property owner's industry are one and the same: both forms of agency result in a claim right to a property.

The opening paragraph of Chapter 2 in Book 5, “Markham, His Farewell to Husbandry,” which was a component to A way to get wealth (1631), may be the closest connection to Locke’s use of the word ‘subdue’ and the May 1674 book list. First, Markham's chapter covers the “ordering, tilling and dressing of all sorts of Barren Clays, whether they be simple or compounded” (Markham 1631). Markham (1631:5-4) reminds the reader that God placed human beings “upon a barren and hard soil, whose bread must evermore be grounded with sweat and labor.” Those who pleased God by working the hard soil may “nobly and victoriously boast the conquest of the Earth, having conquered Nature by altering Nature, and yet made Nature better than she was before” (Markham 1631:5-4). This statement alone helps contextualize Locke's phraseology.

As early as the fourteenth century, the word subdue meant “to conquer and reduce to subjection” (Harper 2020). Through my reading of Locke, Markham's "conquest of the Earth" can be interpreted as the act of turning the earth into an interlinked series of private properties—a patchwork of English enclosures. The conquering and altering of nature, and making nature better than it was before, is a Baconian concept. When I read Markham through political ecology, he was describing the transformation of First Nature into Second Nature: Second Nature is a better-nature; an altered nature that provides more benefit than the First Nature before it. Locke was certainly influenced by Bacon
(Anstey 2002a; Dewhurst 1962; Wood 1991), and he owned the same works by Bacon (Harrison and Laslett 1971:78) that Merchant's (2008) research focuses on, which are also utilized in this chapter. Linking Locke to Bacon through Markham shows not only the natural philosophy connections within Locke's work or the growth and development of the improvement paradigm, but the pervasiveness of the 'altered nature' concept throughout the seventeenth century.

CONCLUSION

Some of the literature on the May 1674 book list appears to have been foundational to the early development of Locke's labor theory of property. My position is that Locke devised the provisions and Shaftesbury instructed Percival to establish and manage the plantation through them. In the next chapter, I identify Shaftesbury as an improver who used his English experiences and the May 1674 book list to develop St Giles Kussoe. With Locke's theory in an 'embryonic' stage to be applied and tested in Carolina, the next step towards Shaftesbury's construction of an estate-sized laboratory was to fill the space within his enclosure with goods, supplies, tools, plants, animals and laborers. The following chapter details Shaftesbury's efforts.
Table 5.1. A transcription of the May 1674 book list.

<table>
<thead>
<tr>
<th>A List of Books which my Lord Shaftesbury carried in to the Country</th>
<th>May 74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnston du animal 2 vol. fol</td>
<td>Herber ts religio Gentilium</td>
</tr>
<tr>
<td>Pultons Statutes fol. 61</td>
<td>Catalogue of ye Nobility</td>
</tr>
<tr>
<td>Blome Geography fol 70</td>
<td>Memoirs de Jeannin 2 vol</td>
</tr>
<tr>
<td>D Newcastles method of dressing horses fol 67</td>
<td>Heresbachius</td>
</tr>
<tr>
<td>Thuanus fol 3 vol. 06</td>
<td>Purchaser</td>
</tr>
<tr>
<td>Collins Merchants accounts fol 74</td>
<td>Shephard constable</td>
</tr>
<tr>
<td>Parkinson of flowers 29</td>
<td>Fleetwood Justice</td>
</tr>
<tr>
<td>Taylors discourses fol. 57</td>
<td>Halls Heroologia</td>
</tr>
<tr>
<td>Howells General history 62</td>
<td>Herbert de veritate</td>
</tr>
<tr>
<td>Markhams Country farmer fol. 16</td>
<td>Erasmus</td>
</tr>
<tr>
<td>Parivals Iron age fol 56</td>
<td>Amour de H. 5</td>
</tr>
<tr>
<td>Harrington Oceana</td>
<td>Phillipe purchasers pattern</td>
</tr>
<tr>
<td>Grays horseman</td>
<td>Maps of England</td>
</tr>
<tr>
<td>Fowlers hist of Swethland</td>
<td>Faliscus</td>
</tr>
<tr>
<td>Philosophcall transactions 8 vol.</td>
<td>Antistii de Jur Ecclesiasticorum</td>
</tr>
<tr>
<td>Molinei Imperium ni Imperio</td>
<td>Harrington Lawgiver</td>
</tr>
<tr>
<td>Wase</td>
<td>French Gardiner</td>
</tr>
<tr>
<td>Daltons Justice</td>
<td>Markham MS.</td>
</tr>
<tr>
<td>Blundville horseman ship</td>
<td>Grallae</td>
</tr>
<tr>
<td>Bliths Improver</td>
<td>White of Government</td>
</tr>
<tr>
<td>Manwood forest law</td>
<td>Terentius</td>
</tr>
<tr>
<td>Markhams way to get wealth</td>
<td>Bakers Chronicle</td>
</tr>
<tr>
<td>Mascall of Cattle</td>
<td>Blome Brittania</td>
</tr>
<tr>
<td>Latitudinarians</td>
<td>Hunting &amp; Hawking etc.</td>
</tr>
<tr>
<td>Cato &amp; Columella etc.</td>
<td>Plats Garden of Eden</td>
</tr>
<tr>
<td>Huarte</td>
<td></td>
</tr>
<tr>
<td>Austen of trees</td>
<td></td>
</tr>
<tr>
<td>Assembly Jus</td>
<td></td>
</tr>
<tr>
<td>Divinium ministerii</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.2. A bibliographic listing of the entries on the May 1674 book list.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Edition</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonstonus, Joannes</td>
<td><em>Historia Naturalis Animalium</em></td>
<td>1657</td>
<td>2°</td>
</tr>
<tr>
<td>Pulton, Ferdinando</td>
<td><em>Collection of all the Statutes now in use</em></td>
<td>1670</td>
<td>2°</td>
</tr>
<tr>
<td>Blome, Richard</td>
<td><em>Geographical description of the four parts of the world, taken from the notes &amp; works of the famous Monsieur Sanson, geographer to the French king, and other eminent travelers and authors</em></td>
<td>1670</td>
<td>2°</td>
</tr>
<tr>
<td>Duke of Newcastle</td>
<td><em>A New Method and Extraordinary Invention to Dress Horses</em></td>
<td>1667</td>
<td>2°</td>
</tr>
<tr>
<td>de Thou, Jacques-Auguste</td>
<td><em>Historiarum sui temporis</em> [Vol. I-III]</td>
<td>1606</td>
<td>2°</td>
</tr>
<tr>
<td>Collins, John</td>
<td><em>Introduction to Merchants accounts</em></td>
<td>1674</td>
<td>2°</td>
</tr>
<tr>
<td>Parkinson, John</td>
<td><em>Paradisi in sole, or, A garden of all sorts of pleasant flowers</em></td>
<td>1629</td>
<td>2°</td>
</tr>
<tr>
<td>Taylor, Jeremy</td>
<td><em>Symbolon ethiko-polemikon, or, A collection of polemical and moral discourses</em></td>
<td>1657</td>
<td>2°</td>
</tr>
<tr>
<td>Howell, William</td>
<td><em>An institution of general history</em></td>
<td>1661</td>
<td>2°</td>
</tr>
<tr>
<td>Markham, Gervase</td>
<td><em>The Country Farm</em></td>
<td>1616</td>
<td>2°</td>
</tr>
<tr>
<td>Parival, Jean-Nicolas de</td>
<td><em>The history of this iron age: wherein is set down the true state of Europe, as it was in the year 1500</em>, transl. B. Harris</td>
<td>1650</td>
<td>2°</td>
</tr>
<tr>
<td>Harrington, James</td>
<td><em>The commonwealth of Oceana</em></td>
<td>1656</td>
<td>2°</td>
</tr>
<tr>
<td>Gray, Thomas</td>
<td><em>The Compleat Horseman and Expert Ferrier</em></td>
<td>1639/1651</td>
<td>2°</td>
</tr>
<tr>
<td>Fowler, John</td>
<td><em>The history of the troubles of Suethland and Poland, which occasioned the expulsion of Sigismundus the Third, with a continuation of those troubles until 1629</em></td>
<td>1656</td>
<td>2°</td>
</tr>
<tr>
<td>[Royal Society]</td>
<td><em>Philosophical transactions</em>, ed. H. Oldenburg*</td>
<td>1665 ff.</td>
<td>4°</td>
</tr>
<tr>
<td>Du Moulin, Louis</td>
<td><em>Paraenesis ad aedificatores imperii in imperio</em>, in qua defenduntur jura magistratus adversus Mosem Amyraldum, et caeteros vindices potestatis ecclesiasticae Presbyterianae*</td>
<td>1656</td>
<td>4°</td>
</tr>
<tr>
<td>Wase, Christopher</td>
<td><em>Dictionarium minus</em>: A compendious dictionary English-Latin &amp; Latin-English*</td>
<td>1662</td>
<td>4°</td>
</tr>
<tr>
<td>Markham, Gervase</td>
<td><em>The English husbandman</em>, including a third part, <em>The pleasures of princes</em></td>
<td>1635</td>
<td>4°</td>
</tr>
<tr>
<td>Dalton, Michael</td>
<td><em>The country justice</em></td>
<td>1643</td>
<td>4°</td>
</tr>
<tr>
<td>Blundeville, Thomas</td>
<td><em>The fower chiefyst offices belongyng to horsemanshipipe</em></td>
<td>either [1566], [1570] or [1593]</td>
<td>4°</td>
</tr>
<tr>
<td>Blith, Walter</td>
<td><em>The English improver</em></td>
<td>1652</td>
<td>4°</td>
</tr>
<tr>
<td>Manwood, John</td>
<td><em>A treatise of the laws of the forest</em></td>
<td>1665</td>
<td>4°</td>
</tr>
<tr>
<td>Markham, Gervase</td>
<td><em>A way to get wealth</em>: containing the sixe principall vocations or callings in which everie good husband or house-wife may lawfully imploy themselves, etc.*</td>
<td>1631</td>
<td>4°</td>
</tr>
<tr>
<td>Mascall, Leonard</td>
<td><em>The government of cattell</em></td>
<td>1633</td>
<td>4°</td>
</tr>
<tr>
<td>Fowler, Edward</td>
<td><em>The principles and practices of Latitudinarians</em></td>
<td>1671</td>
<td>4°</td>
</tr>
<tr>
<td>Cato, Marcus Porcius</td>
<td><em>Columella</em>, Varro, and Palladius* <em>Rei rusticae auctores latini veteres</em></td>
<td>Heidelberg, 1595</td>
<td>8°</td>
</tr>
</tbody>
</table>

152
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Location</th>
<th>Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huarte</td>
<td>Examen de ingenios. = The examination of mens wits, transl. R. Carew.</td>
<td>London, 1596.</td>
<td>4°</td>
</tr>
<tr>
<td>Austen</td>
<td>A treatise of fruit-trees</td>
<td>Oxford, 1657.</td>
<td>4°</td>
</tr>
<tr>
<td>Herbert</td>
<td>De religione gentilium, errorumque apud eos causis.</td>
<td>Amsterdam, 1663.</td>
<td>4°</td>
</tr>
<tr>
<td>Jeannin</td>
<td>Les negociations de monsieur le president Jeannin.</td>
<td>Amsterdam, 1659.</td>
<td>12°</td>
</tr>
<tr>
<td>Heresbach</td>
<td>Rei rusticae libri quatuor</td>
<td>Speyer, 1595.</td>
<td>8°</td>
</tr>
<tr>
<td>Primatt</td>
<td>The City and Country Purchaser and Builder.</td>
<td>London 1658.</td>
<td>8°</td>
</tr>
<tr>
<td>Leybourn</td>
<td>A platform for purchasers, guide for builders, mate for measurers.</td>
<td>London, 1668.</td>
<td>8°</td>
</tr>
<tr>
<td>Sheppard</td>
<td>The offices and duties of constables, borsholders, tything-men, treasurers of the country-stock, overseers for the poore, and other lay-ministers: whereunto are adjoynd the severall offices of church-ministers and church-wardens.</td>
<td>London, 1641.</td>
<td>8°</td>
</tr>
<tr>
<td>Fleetwood</td>
<td>The office of a Justice of Peace. Together with instructions how and in what manner statutes shall be expounded.</td>
<td>London, 1658.</td>
<td>8°</td>
</tr>
<tr>
<td>Herbert</td>
<td>De veritate, prout distinguitur à revelatone, à verisimili, à possibil, i et à falso.</td>
<td>[London?], 1656.</td>
<td>12°</td>
</tr>
<tr>
<td>Erasmus</td>
<td>(The Shaftesbury library lists eight entries; two were purchased by the Third Earl; one was published in 1683.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Péréfixe</td>
<td>The history of Henry IV. Surnamed the Great, King of France and Navarre, transl. [J. Davies or J. Dauncey].</td>
<td>London, 1672.</td>
<td>8°</td>
</tr>
<tr>
<td>Philippes</td>
<td>The purchasers pattern.</td>
<td>London, 1656.</td>
<td>12°</td>
</tr>
<tr>
<td>Maps of England</td>
<td>unknown maps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinoza</td>
<td>Lucii Antitii constantis de jure ecclesiasticorum liber singularis.</td>
<td>1665</td>
<td></td>
</tr>
<tr>
<td>Harrington</td>
<td>The art of Lawgiving.</td>
<td>London, 1659.</td>
<td>12°</td>
</tr>
<tr>
<td>Evelyn</td>
<td>The French Gardinier.</td>
<td>(1658, etc.).</td>
<td>12°</td>
</tr>
<tr>
<td>Markham</td>
<td>Manuscript, unknown and undated.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>The grounds of obedience and government.</td>
<td>London, 1655.</td>
<td>8°</td>
</tr>
<tr>
<td>Terentius</td>
<td>[Terence]. (Shaftesbury library- seven entries between 1619 and 1662).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baker</td>
<td>A chronicle of the kings of England.</td>
<td>London, 1643.</td>
<td>2°</td>
</tr>
<tr>
<td>Blome</td>
<td>Britannia, or, A geographical description of the kingdom of England, Scotland and Ireland.</td>
<td>London, 1673.</td>
<td>2°</td>
</tr>
<tr>
<td>Turbeville</td>
<td>The noble arte of venerie or hunting.</td>
<td>London, 1575.</td>
<td>4°</td>
</tr>
<tr>
<td>Plat</td>
<td>The Garden of Eden.</td>
<td>(several editions printed before 1674).</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.3. The May 1674 book list entries organized by category and order of appearance on the list.

<table>
<thead>
<tr>
<th>Improvement:</th>
<th>Government:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnston du animal</td>
<td>Pultons Statutes</td>
</tr>
<tr>
<td>D Newcastles method of dressing horses</td>
<td>Harrington Oceana</td>
</tr>
<tr>
<td>Parkinson of flowers</td>
<td>Daltons Justice</td>
</tr>
<tr>
<td>Markhams Country farmer</td>
<td>Manwood forest law</td>
</tr>
<tr>
<td>Grays horsemann</td>
<td>Catalogue of ye Nobility</td>
</tr>
<tr>
<td>Wase</td>
<td>Shephard constable</td>
</tr>
<tr>
<td>Markham's husbandman</td>
<td>Fleetwood Justice</td>
</tr>
<tr>
<td>Blundville horsemann ship</td>
<td>Harrington Lawgiver</td>
</tr>
<tr>
<td>Bliths Improver</td>
<td>White of Government</td>
</tr>
<tr>
<td>Markhams way to get wealth</td>
<td>Bakers Chronicle</td>
</tr>
<tr>
<td>Mascall of Cattle</td>
<td></td>
</tr>
<tr>
<td>Cato &amp; Columella etc.</td>
<td>History:</td>
</tr>
<tr>
<td>Austen of trees</td>
<td>Thuanus</td>
</tr>
<tr>
<td>Heresbachius</td>
<td>Howells General history</td>
</tr>
<tr>
<td>Faliscus</td>
<td>Parivals Iron age</td>
</tr>
<tr>
<td>French Gardiner</td>
<td>Fowlers hist of Swethland</td>
</tr>
<tr>
<td>Markham MS.</td>
<td>Memoirs de Jeannin</td>
</tr>
<tr>
<td>Hunting &amp; Hawking etc.</td>
<td>Halls Heroologia</td>
</tr>
<tr>
<td>Plats Garden of Eden</td>
<td>Amour de H. 4</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion:</td>
<td>Philosophy:</td>
</tr>
<tr>
<td>Taylors discourses</td>
<td>Philosophicall transactions 8 vol.</td>
</tr>
<tr>
<td>Molinæi Imperium ni Imperio</td>
<td>Huarte</td>
</tr>
<tr>
<td>Assembly Jus Divinium ministerii</td>
<td>Herbert de veritate</td>
</tr>
<tr>
<td>Latitudinarians</td>
<td>Erasmus</td>
</tr>
<tr>
<td>Herber ts religio Gentilium</td>
<td>Terentius</td>
</tr>
<tr>
<td>Antistii de Jur Ecclesiasticorum</td>
<td>&quot;England's Interest&quot;:</td>
</tr>
<tr>
<td>Grallæ</td>
<td>Collins Merchants accounts</td>
</tr>
<tr>
<td>Travel:</td>
<td>Purchaser</td>
</tr>
<tr>
<td>Blome Geography</td>
<td>Phillipe purchasers pattern</td>
</tr>
<tr>
<td>Blome Brittania</td>
<td>Maps of England</td>
</tr>
</tbody>
</table>
Figure 5.1. The May 1674 book list organized by topic.
Figure 5.2. A bar graph that sorts individual items on the May 1674 book list by category.
CHAPTER 6

ST GILES KUSSOE: THE LABORATORY AND THE MATERIALITY OF LOCKE’S THEORY

When Shaftesbury launched St Giles Kussoe in the summer of 1674, he had four full years of observations collected from Carolina that detailed weather events and seasonal temperatures, the kinds of experimental crop varieties that thrived and failed, the status of the newly formed English colonial society, and discoveries of precious natural resources. However, the success he had hoped Carolina would bring did not reach his level of expectations, as evidenced by the letters of disappointment he and the Proprietors sent to their colony. After four years of waiting hopelessly for returns from the colony that he spent so much time and personal money on, and after three years of waiting for the experiments to come to turn at his co-owned Lords Proprietors Plantation, he seemed ready to finally move forward with his private enterprise. When the king dismissed Shaftesbury as Lord Chancellor in November 1673, it may have been the final act that prodded him to 'go it alone' and finally commit to the establishment of his plantation. Except, he was not alone: he had Locke alongside him.

In this chapter, I detail the processes involved in the settlement and development of St Giles Kussoe not just as a plantation, but as a location of scientific experimentation: a laboratory. This chapter tackles my second research problem posed by Shapin (1988): where were the locations of late seventeenth century science; where were the first English
scientific laboratories? Through this chapter I demonstrate that St Giles Kussoe was scientific in every way: as an enclosure, its walls contained experiments set apart from the public outer world; as a private property, it was built upon the principles of Locke's theory, which he founded through natural philosophy and improvement; and, as a farm, it housed laborers who were under surveillance so that their inherent skills in husbandry could be extracted and then amplified through scientific principles and methodologies.

This chapter consists of two parts. In the first part, I explain how Locke's Carolina Memoranda entries—abstracted excerpts of letters from the colony—potentially influenced Shaftesbury's instructions to Percival on how to establish the plantation. I also contextualize three colonial letters that appear to echo Locke's property theory and Shaftesbury's evolving ideas on his plantation and its political position within the colony. For the last part of this chapter, I demonstrate how Shaftesbury conceptualized and established St Giles Kussoe through Locke's property theory through two lines of data: the pairing of the May 1674 book list with the Percival Instructions, and GIS analyses of the St Giles Kussoe plantation landscape. I show how items on the May 1674 book list provided information for Shaftesbury to use in order to make his 12,000-acre estate conform to Locke's three provisions. Through GIS, I am able to clearly illustrate how St Giles Kussoe was, in fact, mostly wasteland, from which I can interpret the laboratory uses of both uplands and lowlands. Lastly, I show that Shaftesbury's intent to have colonial agents and laborers conduct scientific experiments on nature is itself evidence that he built the first 'scientific laboratory' in Carolina.
LOCKE'S CAROLINA MEMORANDA AS PLANTATION INFLUENCE

Locke kept notebooks that contained paraphrased versions of several letters from Carolina between September 1670 and March 1672 (SP 2000:222-225, 245-253, 346-356, 386-389). As Proprietary secretary, Locke's job was to transfer correspondence between his employers and their colony. His Carolina Memoranda entries were bulletin points of information that could quickly brief all eight Proprietors. Shaftesbury could probably trust in Locke to notate only the most pertinent information about the colony. Shaftesbury also knew that, like Locke, he had a good reason to stay updated on progress from Carolina because they both had property aspirations there.

The 23 May 1674 instructions from Shaftesbury to Percival were specifically intended for a plantation on Locke Island (SP 2000:439, 441). Instead, he settled a 12,000-acre tract that Maurice Mathews originally surveyed on the upper Ashley River for Shaftesbury in 1672 (SP 2000:420). Regardless of the actual location, the instructions to Percival should be applied to Shaftesbury's plantation, which was St Giles Kussoe on the Ashley River.

Two sets of instructions were written on 23 May 1674 and given to Percival before he sailed for Carolina. One set consists of four short orders: families were to be settled into townships within the plantation, plant provisions, keep "faire Correspondance with ye Neighbour Indians", and deliver supplies bound for Charles Towne when Shaftesbury's ship reached Carolina (SP 2000:439-440). The other set of instructions is quite different. It is a list of 33 directives that were to be completed, in order, according to Shaftesbury’s plantation needs (SP 2000:440-445).
First, Percival was told to go to the Bermudas to stock the *Edisto* with "Indian Corne for six months" and "Hogs, poultry, potatoes, Orange trees &c." and to also "consider what things you may have there either for profit or pleasure" (SP 2000:440). In 1671 Shaftesbury bought two, 25-acre lots in Bermuda and was also acting Governor of those islands most likely from 1671 to 1674 (Haley 1968:233). Shaftesbury probably held some influence in the Bermudas, which is implied through his instructions to Percival: the first eight of 33 listed orders relate directly to those islands. While in Bermuda, Percival was to also inquire about the price of cattle and figure out how many could be transported to Carolina. Percival was to determine if the cattle at Bermuda were better than Maryland because he was "not without farther order to trade either with New Yorke or Virginia" (SP 2000:440-441). Here, Locke's Memoranda provided the reason for Shaftesbury's stop-order on cows from certain colonies.

In September 1670, Joseph West noted that Virginia cattle were introduced to the Lords Proprietors plantation (SP 2000:225). Two months later, a letter mentioned that cattle were "Cheaper supplyed from Bermudos" because the Virginia cattle were "extraordinary deare", or precious, revered and valuable (SP 2000:245, Harper 2020). Locke made a note that "Horses and Cattle larger and cheaper at New York then Virginia" and that "Virginia Cattle and provisions excessive deare and their cattle small" (SP 2000:245). Instead, "larger and cheaper [cattle]" were available "from Bermudos" (SP 2000:245). Furthermore, Locke made sure to mention Joseph West's assertion that "A Virginia hog of 30[shillings] not worth 7[shillings] in England" (SP 2000:245). In eight months time the Charles Towne colonists had had enough exposure to cows from other colonies to know which were worth purchase. In the summer of 1671, Locke noted that
"Live cattle of one years growth at 3£ per head" were to be sent from Bermuda to Charles Towne (SP 2000:351). Shaftesbury intended to "lay out a good deale of money in making a Plantation" for himself, and these Locke-filtered livestock price and quality reports would have helped Percival maximize Shaftesbury's profits from a future cattle herd. Once Percival had settled the plantation and was able to sail again, he was to go to either Bermuda or Maryland to satisfy Shaftesbury's intention "to have 300 or 400 head of Cattle upon the place" as soon as possible (SP 2000:442).

PERCIVAL: INADVERTENT SPY?

Besides cattle, Percival was to inquire about the husbandry and products of where he traveled, and then take the information to Carolina and give it to Shaftesbury. It can be suggested that Shaftesbury partly evoked the mission of Salomon's House in *The New Atlantis* (Bacon 1627). The scientists of Salomon's House sent their agents to foreign lands to basically capture and return to Bensalem with information concerning machines, inventions, husbandry methods, and any other useful systems of knowledge for further improvement through science and the arts (Bacon 1913 [1627]:273).

In May 1671 the Proprietors sent explicit instructions to a ship captain that stated "In all places you goe, you are to learn as much as you can any of ye husbandry or Manufactures of ye place...particularly in Virginia ye sorts & ordering of mulberry trees, silkworms" for transplantation in Carolina (SP 2000:321). The captain was also to learn how to make the "best Silk, Tobacco, Indigo, Cotton, etc." for replication elsewhere (SP 2000:321). These requests went beyond the captain's regular tasks of delivering goods and supplies between colonies: the Proprietors were requesting non-malicious espionage. Tim Unwin (1998:150) said Locke's wine research—conducted for Shaftesbury—in
France from 1675 to 1679 was "agricultural espionage." It can be suggested that these fact-finding, surveillance-oriented colonial requests echo the Salomon's House 'mission' of the Royal Society.

Shaftesbury had been involved in this kind of extraction of knowledge for years. In 1665 the Society sent out questionnaires to gain as much information as possible on English, Scottish and Irish husbandry with the intent to consolidate the best methods for improvement and public benefit (PT 1665:0040, 3 Thirsk and Cooper 1972:150-151). The questionnaire work was undertaken by the Georgical, or agricultural, Committee founded in 1664, of which Shaftesbury was one of 32 founding members (Birch 1756:407; Haley 1968:220; Thirsk and Cooper 1972:150). The Royal Society also sent questionnaires to various colonies, including Virginia and the Bermudas (PT 1666:0003) and other countries like Turkey (PT 1665:0131); Persia, Guiana, Brazil, and in the East Indies, Suratte (PT 1666:0003); and, Hungary, Transylvania, Egypt, Guinea, Greenland and the Antilles (PT 1666:0022) to learn about a vast array of things like air quality, vegetables, water, animals, natural oils, iron smelting, opium use, horse breeds, soil varieties, insects, and even spider web rumored so strong it could be spun into silk.

Percival was told to become informed "in all the Husbandry of Bermudes applicable to Carolina" (SP 2000:441); "to consider whether packing Oranges in drye chests will not preserve them better than greene"; “to make tryall what sort of Tymber doth best” when Carolina wood was used (SP 2000:442); and to also inquire about Bermudan oranges, orange flower and rose waters, and honey (SP 2000:441). He was to

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3 For citation purposes the Philosophical Transactions of the Royal Society are listed as year of publication followed by a four-digit number that corresponds with the Royal Society's web listing methods at https://royalsocietypublishing.org/loi/rstl/group/c1600.d1660.y1665.
learn how to plant and use cassava "for bread and Drink which I am informed grows in Virginia" and try the crop in Carolina (SP 2000:441). Shaftesbury wanted Percival to send him "an accompt from tyme to tyme of the Country, the properties of the soyle" and to find the deepest and shallowest depths of the Edisto River (SP 2000:443, 444). The Percival Instructions can be read as a Royal Society-infused questionnaire that was intended to assist in the creation of a colonial laboratory that utilized foreign knowledge.

REPORTS ON (THE LACK OF) GOOD PLANTERS AND POLITICIANS

Locke's Memoranda informed the Proprietors about the potential and bounty that Carolina naturally provided. The Ashley River was "fertile" where "everything thrives beyond expectation" (SP 2000:223). The news from Carolina in 1670 was promising: "Oranges, Lemons, Limes, Pomcitrons [Lumia, 'pear lemons' or 'French limes'], Pomegranats, Fig trees, [and] Plantanes" thrived, as well as cotton, olives, sugar cane, tobacco, hemp and flax, which prompted the suggestion that almonds and dates could also do well (SP 2000:223, 250, 386). When the Proprietors gave experimental planting instructions to Joseph West for their private plantation in 1669, they told him to try cotton, indigo, olives, sugar cane and ginger. Each plant type was to be grown in different soil types, such as "Sandy land, some in light black mould" or "a Sandy mould and dry" (SP 2000:125-127). Upon their initial landing, colonists sent soil information back to England that Locke noted was a "fruitful, mould black 1 or 1/2 foot deep" and was "generally without fault" (SP 2000:250, 354). Exactly two years after the Proprietors plantation was settled, West reported that only 200 bushels of both corn and peas were produced during the previous growing season, which he warned "will not hold out till next crop" due to "very little rain in 12 month" (SP 2000:387). West also admitted that
the indentured servants wasted time on his watch: they spent too much of their term clearing 40 acres, and as a result, their labor contract was near expiration.

After favorable reports from William Hilton's initial exploratory "discovery" of Carolina in 1663 (SP 2000:18-25); Robert Sandford's more in-depth "Port Royall Discovery" for a suitable colonial landing site in 1666 (SP 2000:57-82); and, consistent, glowing reports about the high quality of soil, air, water and plant life in the colony for two straight years, it must have been crushing to the Proprietors as they received only bad news of minimal progress towards their program. More so, political news about Governor Joseph West and the Grand Council were unfavorable. Concerning West, Locke's Memoranda noted "West proud and peevish" and he "denyed a Parliament for feare his election or actions should be questioned" (SP 2000:349). Concerning the Council, it had a few "Men of reason on it...but ignorant of planting": colonists wanted "an understanding planting Council" (SP 2000:224, 245). Joseph West, as governor and the Proprietors' private plantation planter, was a problem, and Shaftesbury acted to remedy it. He appointed Percival governor of his plantation, who was "to understand" that he was in "noe way under the Government of the plantation [colony] at Ashley River...theire Laws haveing noe influence upon you" (SP 2000:443). The launch of Shaftesbury's private plantation was inevitable and needed.

SHAFTESBURY'S LETTERS AS FLEXED MUSCLE AND DIRECTIVE

Besides Locke's Memoranda, three specific letters that postdate Locke's notebook captured Shaftesbury's increasingly negative disposition toward the colony and especially its governing council. The first letter from 18 May 1674 scolded both Governor West and the Grand Council for requests they placed with the Proprietors (SP 2000:435-438). This
letter made it clear that the Proprietors' intention was to have a Carolina dependent upon itself and its own work, not to "be Subservient in Provisions and Timber to the Interest of Barbados" (SP 2000:436). The Proprietors also scorned the request from Carolina for cattle: "but having not paid us for tools and clothes, how do you think that we should be at so far a greater charge in cattle?" (SP 2000:437). They reminded the government that "our designe to have Planters there and not Graziers" was still in effect, and that if the Proprietors' "Intentions were to stock Carolina att that Rate, we could doe better by Baylife and Servants of our own, who would be more observant of our orders than you have been" (SP 2000:437-438). Following suit, five days later Shaftesbury's instructions to Percival tell him to stock "300 or 400 head of Cattle" at the plantation (SP 2000:442). The title 'bailiff' was a reference to a subordinate administrative official that worked for the crown or a local sheriff, but it also meant "agent of a lord, overseer of an estate" (Harper 2020). Shaftesbury, coauthor of this 18 May letter, most likely was referring to bailiff in the latter sense—that "Baylife" was Percival.

The second letter of interest was written by Shaftesbury on 9 June 1675 to Maurice Mathews (SP 2000:465-466). At this point in time, Percival had acquired a title for St Giles Kussoe and was sailing to get stock and supplies per Shaftesbury's orders; Woodward had established Indian trade; and the servants were likely building, breaking ground and beginning husbandry. Shaftesbury wanted Mathews as plantation manager, but instead chose Percival. In the letter, Shaftesbury mentioned that his "Setlement on Ashley River pleases me something the better" than he expected, and through an apology, told Mathews that his plantation had "at hand an old Planter" as manager (SP 2000:466). I interpret Shaftesbury's use of the word "old" not to mean that Percival was aged,
although he was 50 years old in 1675, but that he was "mature, experienced" (Harper 2020). Likewise, "old planter" referred to the most tenured and experienced of Virginia's planters during the 1600s (Thompson 2004:124). Shaftesbury's choice in Percival and his labeling as an "old Planter" was an attempt by Shaftesbury to truly begin English husbandry in the colony, and to counter the Grand Council's inability to stock its ranks with knowledgeable planters.

Lastly, Shaftesbury's letter the following day on 10 June leveled insults against the Governor and Grand Council unlike any letter sent to the colony in prior years. The tone of this long letter is instantly set by its opening: "You cannot be ignorant of the particular care I have taken of you and your Setlement ever since you first sate downe upon Ashley River" (SP 2000:466). After complaining at length about the massive debt both he and the Proprietors amassed in five years, Shaftesbury closed the letter with disdain that Percival was mistreated as governor of his private plantation. Shaftesbury (SP 2000:468) then leveled harsh, pointed criticisms against West and the Council:

"you cannot thinke me soe mad to venture soe considerable an Estate under your Governm't unlesse the Gov'r [J. West] were richer. For it is as bad as a state of Warr for men that are in want to have the makeing Laws over Men that have Estates. Therefore I must desire you to let me and my people alone."

This was a clear warning: in Carolina, Shaftesbury and his private colonists were untouchable. Incursion by weak, poor men without estates into Shaftesbury's affairs was an act of war. St Giles Kussoe, then, as private property, was exceptional in exactly how "private" that property truly was.

Since the colony and its governing body depended on Shaftesbury and the Lords Proprietors for essential supplies and provisions, Governor West and the Grand Council
had no choice but to comply with Shaftesbury's demands. St Giles Kussoe became a 
formal private property in March 1675 (Bates and Leland 2006:29-30) and the 10 June 
letter above is evidence that Shaftesbury believed his property rights were threatened—if 
he felt otherwise, he would not have asserted that people without estates had no right to 
threaten estate owners. This letter reiterated the Percival Instructions from a year before: 
Percival was exempt from the governance of Charles Towne (SP 2000:443).

Shaftesbury needed his plantation to be separated—indeed, severed—from the local 
government at Charles Towne because he needed his plantation to behave like a 
laboratory—a place that required extreme privacy and control over the space within the 
private property of the enclosure. Surveillance of St Giles Kussoe was not allowed by 
anyone; the enclosed boundaries prevented entry of all. When the enclosure of the 
laboratory is breeched, valuable information can be easily lost, ruined and destroyed due 
to intruder ignorance and inability to identify experiments, and potential theft of the 
produce of experimentation (Latour 1979:244). Laboratory access was thereby tightly 
regulated (Shapin 1988).

When Locke affixed labor to property, property theory became modernized. My 
contention is that Shaftesbury modernized an English country estate when he built St 
Giles Kussoe through Locke's theory. Since St Giles Kussoe was a modern colonial 
estate, or, a plantation, then its labor force was subjected to forces of modernization 
because their labor was scientifically oriented. As the land was engineered through social 
relations, so too were social relations engineered through land-use practices. In this 
Lockean landscape, aspects of Second Nature were constructed through advanced, 
scientific, modern labor.
IDENTIFYING COLONIAL PRIVATE PROPERTY AS A LABORATORY

Critical to this dissertation are Shapin's (1988:373) inquiries into not only the physical, but social settings, of science; the identities of the people present while scientific investigations occurred; and, how those people were "arrayed in physical and social space" at the location of experiment. The laboratory, especially in the seventeenth century, was as much a social construct as it was a physical place. Experiments were conducted by trustworthy, reputable members of English society—gentlemen—who worked at locations of science within the space they physically and socially controlled (Shapin 1988:378). Since experimentation was born through the improvement of private property, the gentlemen owners of that property owned and regulated the information and knowledge born from the science experiments they controlled.

The critical feature of the laboratory was its threshold, or the point of entry and exit in and out of the controlled environment—the scientific property (Shapin 1988:374-375). Control was not only essential to the success of the experiment, but to the accuracy and believability of the result. Therefore, the threshold is "a constraint upon the distribution of knowledge" because it is a "constraint upon social relations" (Shapin 1988:375). Enclosures were also constraints upon social relations because the encloser of property had the sole power to allow people in or leave them out. Since the encloser had power over entry, they had power over exit and complete control over the space inside. The creation of science was successful not just through control over the experiment, but control over the space that contained the experiment and, most importantly to my thesis, the laborers who performed experiments within that space.
The Royal Society of London had formal plans to construct a massive laboratory but never did (Shapin 1988:377). Although it may seem unquestionable that laboratories were extremely formal places, the reality of the later seventeenth century was that “the new experimental science was carried on in existing spaces, used just as they were or modified for the purpose” (Shapin 1988:377). I argue that one of those 'existing spaces' was the country estate, and Shaftesbury's Wimborne St Giles's house with its hundreds of experimentally-oriented fruit trees was a perfect example. He already performed country experiments: his Carolina plantation could just be an extension of what he was already involved in, but greatly augmented through new, unprecedented experiments. Because "the most significant venues" for the practice of science "were the private residences of gentlemen" (Shapin 1988:378), and if “the country estate became a microcosm of the empire, where men of property improved their estates according to the rationality of ‘science’” (Olwig 1996:640), it can be argued that Shaftesbury constructed, from scratch, an estate in a colonial countryside setting within the English empire that was founded entirely upon experimental theories and methods.

FINDING SOCIALLY ENGINEERED PEOPLE AND PROPERTY

Alongside Shapin (1988), I borrow from the English agrarian landscape archaeology of Richard Newman (2005) to identify St Giles Kussoe as a laboratory. Newman (2005) devised a research agenda to assist post-medieval archaeologists in their work on agrarian society in the United Kingdom. I find great utility in Newman's scholarship and agenda because it helps me study English agrarian estates regardless of their location in the world due to one main reason: both St Giles in England and St Giles in Carolina were owned, managed and designed by the same person.
Newman (2005:208, emphasis mine) lists four major themes that should be considered for the study of agrarian societies; this dissertation employs three: (1) “a greater use and application of archaeo-science, especially in relation to the ecology of ancient hedgerows and woodlands, the reconstruction of past rural environments”; (2) “the impact on society and the environment of the great estates and improving landlords, not just in relation to agricultural techniques, but status competition, emulation, adoption of new technology and social engineering”; and, (3) “excavations of abandoned farmsteads and cottages, especially where the ownership or tenancy is documented, in order to study the material culture of individual households.” Shapin's (1988) inquiries overlap with Newman’s (2005:208) themes and both are aligned at St Giles Kussoe.

After 1660 and the formalization of the Royal Society, English improvement began to permeate society in deeper, more varied ways. Lerner (1992:18) points out that "substantial noninstitutionalized research was taking place through the efforts of the 'gentlemen improvers'," where the "ethic of improvement" was a motivation to try new things regardless "of any economic reward." Those who improved altered their land into a new environment through the new social—political—ecology they crafted through nature-human reciprocal exchange via labor-based production. Landscape archaeology is a "technique for analyzing the social structuring of the environment" in past agrarian settings (Newman 2005:210). The "improving landlords" of "great estates" controlled the threshold of their enclosure (Newman 2005:208)—a portal that was a "constraint upon social relations" (Shapin 1988:375).

St Giles Kussoe was a location for the "adoption of new technology and social engineering" (Newman 2005:208) where the landlord, or the country gentleman, arranged
and controlled the social relation between their laborers and the scientific experiments within their estates (Shapin 1988:373). Newman's agrarian landscape archaeology is used as a tool to identify Shapin's postulated locations of seventeenth century experiment in a 1670s colonial setting. St Giles Kussoe can therefore be understood as a place where new colonial labor forms were forged through ecological tests and trials.

Lastly, GIS, an "archaeo-science", reveals the historic St Giles Kussoe property line—the enclosure—on today's geographic landscape (Figure 6.1). The reader will quickly notice how utterly massive Shaftesbury's property was in relation to Charles Towne. Due to accuracy errors in historic surveys, the georeferenced St Giles Kussoe totals 13,182.7 acres, slightly more than what was granted. Several landforms, ditches, property lines, and correction for the course of the Ashley River were used to rectify Henry A.M. Smith's (1988 [1910]) drawing of St Giles Kussoe, which was the basis of the GIS analysis. Although the acreage is 1,182.7 acres more than the 12,000-acre rightful claim to Shaftesbury's land, the larger acreage is geographically accurate. With the entirety of St Giles Kussoe visible through this map, I am able to quantify and qualify the high and low ground, hypothesize the ways labor managed such a vast landscape, and interpret how that labor created a laboratory.

LOCKE'S PROPERTY PROVISIONS IN THE LANDSCAPE OF ST GILES KUSSOE

Locke embedded clauses into his Chapter 5 of the *Second Treatise* that remind the aspiring private property creator to not take too much land, leave enough good land for others, do not let what has been enclosed or grown spoil carelessly, and take up only enough land as there is enough labor to fully reach. The provisions have been the subject of scholarship and there are several ways to both read and interpret Locke's warnings
(Bishop 1997; Ince 2011; Lustig 1991; Mooney 1981; Sreenivasan 1995). One of the only people in the world that could have known the inner workings of Locke's ideas and theories—the provisions—was Shaftesbury. Furthermore, Locke's three provisions appear as short, moral statements and read like lessons to those newly learning—instructions for young, hopeful enclosers and old, seasoned estate owners. The provisions, then, appear to be the earliest-conceived, therefore foundational, components of his theory. Not surprisingly, all three deal exclusively with property in land, which, Locke claimed, was the primary purpose of his work on property (II, §32).

**THE MATERIALITY OF THE "ENOUGH, AND AS GOOD" PROVISION**

The basis for the "enough, and as good" clause lies in the available amount of good and wasteland left outside of enclosures for commoners to privatize. The power of this provision, and the quality of it that is important to connect to Shaftesbury, lies within Locke's (II, §33) extremely strong interpretation of it: "For he that leaves as much as another can make use of, does as good as take nothing at all." Did Shaftesbury claim a 12,000-acre parcel that satisfied the "enough, and as good" provision?

To answer this question, I hypothesized that if the majority of acreage within St Giles Kussoe was wasteland, then Shaftesbury could claim that he was leaving "enough, and as good" land outside his enclosure because he took up more bad than good. To claim *waste was as if no land was claimed at all*. Here, GIS analyses of the elevation models and historic St Giles Kussoe property lines would show whether Shaftesbury claimed mostly good or wasteland. Time did not allow for analysis of the land surrounding St Giles Kussoe and the properties that were eventually claimed alongside it. In 1676, Jacob Waite, a leather cutter and associate of Shaftesbury's, claimed a 764-acre property that
abutted St Giles Kussoe—no other property was settled adjacent to St Giles Kussoe during its active years of 1675 to 1685 (Bates and Leland 2006:37).

The GIS analysis reveals that St Giles Kussoe contained both uplands and lowlands (Figure 6.2). Blue shades denote lowland while brown shades denote uplands (Figure 6.2). Historic sources and scholarship that discuss wasteland and commons in England were consulted to determine what was and was not wasteland in the 1670s (Cook and Williamson 1999; Kerridge 1973; Thirsk and Cooper 1972:151). The origins and meanings of the words moor, heath, fen, bog, swamp and savanna were critiqued (Harper 2020). Beyond descriptors such as "morass, swamp", "waste ground", "low land covered wholly or partly by water", "wet, soft, spongy ground", or "a tract of low-lying marshy ground", no clear qualitative seventeenth century definitions explicitly define what "wasteland" was: it was simply land that was not arable or pasture, and it could not be plowed or grazed unless it was physically improved for the purpose.

To assign a contour line of determination for what was and was not wasteland in 1674, the GIS analysis included the United States Department of Agriculture soil survey for Dorchester County (Eppinette 1990) and the location of every known archaeological site within St Giles Kussoe. Both sources were combined and compared to the slope gradient on the edges of the high ground landforms, which allowed me to assess St Giles Kussoe for what I would call 'wasteland' versus 'arable and pasture.' Given the available information, all land below the 20' contour line would have been considered waste and the land above that line would have been considered arable/pasture in the 1670s. The lowest and highest elevations inside the plantation are 0.25' and 60.5' respectively.
The GIS analysis determined that wasteland constituted 8,302.6 acres where arable and pasture uplands totaled 4,880.1 acres (Figure 6.3). This calculation means that Shaftesbury was absolutely leaving “enough, and as good” land for everyone else outside his enclosure since he claimed almost twice as much wasteland as good land; the ratio of good to waste is 1:1.7 acres. He could have argued to anyone that he enclosed a lot of poor quality wasteland that needed major improvements.

To be sure, the land marked by light beige and pale brown shading (Figure 6.2) would have been classified as wasteland in the 1670s because that land and the interior dark blue colored spaces supported eighteenth century inland rice agriculture that required low and wet freshwater floodplains and swamps. Recent archaeological landscape documentation identified at least 1,804 acres of eighteenth century inland rice system within the lowest areas of St Giles Kussoe (Felzer et al. 2010:27-28), as evidenced by clearly visible grid-pattern shapes that represent former rice embankments and ditches (Figure 6.4). Because this area and others like it throughout St Giles Kussoe supported wet rice agriculture, all of the former rice fields can be labeled wasteland.

POTENTIAL USES FOR WASTELAND IN ST GILES KUSSOE

Within the wasteland was a kind of terrain categorized historically as 'savanas.' In the 1550s a savana (the more modern spelling is 'savanna') was a "treeless plain," but by the 1670s it was "a tract of low-lying marshy ground" (Harper 2020). Savannas were discussed in Blome's Britannia (Blome 1673:333), a book on the May 1674 book list: in Jamaica there were "many Savanas, which are intermixed with the Hills and Woods...where are great stores of wild Cattle...and these Savanas were formerly fields of Indian Maiz or Wheat...[that] were converted [by colonists] to Pastures for the feeding
their cattle." Henry Woodward (SP 2000:457) traversed St Giles Kussoe and told Shaftesbury in a 31 December 1674 letter that he passed through “spatious Savanas, seeming to ye best of my judgment good Pastorage.” The 1716 Wragg plat of former St Giles Kussoe (Figure 6.5) displays portions of three savannas—"Cow", "Wampee", and "Long"—that are also visible through the GIS digital elevation model (Figure 6.2). "Cow Savana" may have received its name due to Shaftesbury's massive cattle herd. His request of "300 to 400" cattle must have been met, and the stock must have been breeding, because by August 1682 there were "173 cows, 86 heyfers, 149 steeres, 25 bulls, and 161 calves" at St Giles Kussoe (Stringer Notes 1684:25). It is highly likely those 594 cattle grazed the plantation savannas.

CATTLE PROVOKED FLOATING MEADOW TECHNOLOGY TRANSFER?

Generally in Carolina, and similar to Virginia, cattle roamed the woodlands and foraged on fresh spring shoots and Spanish moss, an air plant that grows on oak trees (Otto 1986, 1987; Zierden and Reitz 2016). Virginia cattle foraged in vast woodlands at little to no cost through techniques historians call the "Chesapeake System of Husbandry" (Anderson 2002; Carr and Menard 1989). That system was completely opposite from seventeenth century English husbandry, where cattle were enclosed to graze on pastures, manure was turned with the soil, and after time the pasture was converted into arable for crops while the cattle were moved to a different enclosed pasture to repeat the cycle (Anderson 2002:378, Kerridge 1972:62, 87-88). Anderson (2002:389) notes that European travelers to Virginia thought the Chesapeake system "was not the proper way to exercise dominion over God's creatures." However, the system worked. The Chesapeake system was similar to that practiced by transplanted Scots on Ulster Plantation in Ireland.
during the early seventeenth century, where the rugged terrain made enclosing land
difficult, so cattle were managed open-range style (Hill 1993).

In Carolina, the lowlands—the wasteland—were also the "hard feeding marshes" in
tidal flats full of river canes, saltgrass, cordgrass and Spanish moss (Otto 1987:15;
Zierden and Reitz 2016:87). The savannas, interior freshwater swamps, and the swamps
and "hard feeding marshes" alongside rivers were environments appropriate for fattening
cattle. Cattle grazed the riversides in the cold months while the woodlands were burned
off to encourage spring sprouts. Afterwards, the woodlands and savannas were grazed in
warm months (Otto 1987; Zierden and Reitz 2016). While this system was practiced in
Carolina, the method was producing small cattle in Virginia, which was not desirable to
either the colonists or the Proprietors (SP 2000:245, 440-441). But in Carolina, food
sources were richer for cows in the woods, marshes and swamps than they were in
Virginia, so a 'wasteland grazing husbandry' could have produced stockier cattle.
Although Carolina provided more natural fodder than did Virginia, it may have not been
enough food for very large herds.

While the open-range method would have worked within the enclosure of the
plantation, with the herd at almost 600 head and the likelihood the herd would increase,
Shaftesbury may have needed more than natural forage for his growing stock. I suggest
that Shaftesbury may have had some of the interior swamps and savannas improved into
floating meadows similar to what his own Wimborne St Giles estate supported
throughout the seventeenth century. I have no evidence such improvements at St Giles
Kussoe occurred; however, given the context of his life paired with St Giles Kussoe as a
theoretical product of Locke's ideas, it can be argued that some of the interior swamps
and savannas of the plantation were improved into floating meadows. If anything, Shaftesbury could have learned if floating technology was transferrable.

The floating or watering of meadows—low grassy flatlands—in England was a complex skill that has antiquity to the twelfth century; by the late sixteenth century the technology was formalized, as early seventeenth century publications explained clear methods and benefits of the practice (Cook and Williamson 1999; Cook et al. 2003). Floating a meadow required the diversion of a stream or river through canals and ditches in order to force a thin sheet of water to flow over meadow grass in the winter, which prevented frost and nourished the crop with nutrient-rich water (Bettey 1977). The benefit was thicker, taller grass fields for sheep at an earlier time in the spring, which allowed for larger flocks and more wool for market. Cattle were rotated into floated meadows after sheep were moved elsewhere. Grass grew thick and tall and was harvested for high quality hay to feed cattle and sheep as needed year round (Historic England 2018). Important to note is that water systems were easier to install when larger, enclosed tracts were privately owned (Allen 1992:121; Cook and Williamson 1999:10).

Shaftesbury's grandfather, Sir Anthony Ashley, assumed possession of the manor and estate lands at Wimborne St Giles around 1604/5 (Fleming 2007:35-36). A 1659 estate plat map of St Giles displays several floating meadows watered through intricate diversion canals that were most likely built under Ashley's tenure (Fleming 2007:63-65). Based on the location of Wimborne St Giles among the numerous floating meadows that predate 1640, it is likely that Ashley's estate had floating meadows by the time he died in 1628 (Figure 6.6). Furthermore, the 1672 plat of Wimborne St Giles shows that Shaftesbury extended and expanded the floating meadow system after 1659 (Fleming...
2007:64). Such an expansion shows that the floating of meadows was profitable and worthwhile: it is therefore possible that Shaftesbury was intent on the expansion of floating meadow technology simultaneously on both sides of the Atlantic. He may have bonded indentured servants from his local area who worked floating meadows to go to Carolina. Much more work is required to know whether English floating meadow technology transferred to Carolina before 1700; however, given the context provided by this dissertation, the possibility is high and merits serious inquiry.

Shaftesbury had the 1618 edition of John Norden's *The surveisors dialogue* [1607] in his library. A large part of Norden's book was devoted to the improvement of different types of ground, the effect watered meadows had on cattle, and the overall benefits of watering meadows. There “are two sorts of meadows, low and moist, and upland and dry” where “the low is commonly the best, because they are aptest to receive [the] falling and swelling waters, which for the most part bring fatness with it…and makes the grass to grow cheerful” (Norden 1618:201-202). Upland meadows can be plowed as arable, can be grazed as pasture, and are best for hay, while lowland meadows should not be mowed as often as uplands because the land becomes too rich, and excessive mowing hurts the health of grass (Norden 1618:202). Likewise, Shaftesbury's copy of Walter Blith's *English Improver Improved* (1652) contains 10 chapters on meadow watering techniques and instructions on how to build canals, drains, ditches, flood and water control gates, and ponds for water reserves. The main point of Blith’s argument was that low meadows were wasteland that could be converted into pasture for cattle if the meadows were improved through floating technology.
The savannas at St Giles Kussoe, based on Norden's (1618) descriptions, were the more preferable "low and moist" variety. Here, Shaftesbury's goal to claim and enclose a majority of his land as wasteland but convert it into good land demonstrated his skill as an improving encloser that was abiding by Locke's "enough, and as good" provision against unlimited, unwarranted property accumulation. Shaftesbury could also run experiments to see whether cattle that grazed in the unimproved wastes grew as large as those on the floating meadows. The Royal Society's Georgical Committee, which Shaftesbury sat on, was also focused on "how waste lands, heathy grounds, and bogs might be well employed and improved" (Thirsk and Cooper 1972 [1664]:150-151). For Locke, if land, even wasteland, was enclosed, the property creator needed good reason to enclose. The improvement of wasteland through any method was encouraged by many (Hoyle 2011; Slack 2015; Warde 2011). Therefore, the creation of floating meadows would have satisfied the improvement, thus enclosure, of property.

**HOW ST GILES KUSSOE UPHELD THE "SPOILAGE" PROVISION**

After the "enough, and as good" provision was satisfied, Shaftesbury had to avoid spoilage: if enclosed land contained useful things, but those things went unused and were ruined through spoilage, that land should return to the commons. The books on the May 1674 list contain information that would have helped Shaftesbury generate methods and practices to diversely use all available land. The lowland swamps and savannas, while waste, were perfect cattle lands. Therefore, anyone in Carolina with any number of cattle could have taken advantage of the wasteland enclosed as St Giles Kussoe. Shaftesbury, then, had to demonstrate that he had ample labor, livestock and laboratory experiments planned to prevent as much spoilage as possible throughout his property.
My review of the literature identified three primary avenues that Shaftesbury could take to handle the Spoilage provision: trees, experimental plantings, and animal labor. All three are greatly detailed in several books on the 1674 list, including many *Philosophical Transactions* articles. The *Transactions* entries mostly detail experiments conducted by gentlemen and Society fellows at their own estates; Shaftesbury, also a Fellow, conducted experiments on fruit trees at Wimborne St Giles and, as this dissertation argues, extended his scientific practice to his Carolina estate.

**ORCHARDS OF SCIENCE**

Raising an orchard of fruit trees was a way for a person to get closer to God and the Garden of Eden (Attie 2011; Bartos 2010). Ralph Austen's *Treatise of Fruit=Trees* (1657) and its companion volume bound with it, *The Spirituall Use of an Orchard*, provides explicit detail on the care for orchards of numerous fruiting trees. Austen (1657) connected a person's husbandry on an orchard to Adam's fruit-tree husbandry in the Garden of Eden, and argued that the spiritual power of fruit eating was worth the work an orchard required. Austen told the reader how to amend and improve soils for orchards; in his *English Improver Improved*, Walter Blith (1653:265-266) cited Austen's *Fruit=Trees* when he informed his readers that orchards were a form of improvement that greatly raised land value. Austen was also the "protege" of Samuel Hartlib (Webster 1970:10), and was a member of the Oxford Philosophical Club after joining the college in 1646 where he spent the next 30 years until his death (Turner 1978; Wood 1984:27). Indeed, the 1657 edition of *Fruit=Trees* was dedicated to Hartlib, while the 1665 edition was dedicated to Robert Boyle—Austen's horticultural background was rooted in early
English science at Oxford as expressed through his book. Locke and Shaftesbury owned copies of the 1657 edition, which was surely utilized at Wimborne St Giles.

Shaftesbury kept an extremely detailed journal of his orchards from 1675 until he went into exile in 1682 (PRO 30/24/5/293). He listed 403 fruit trees in his Deer Court organized into 16 rows based on tree type and nearness to the brick walls of the enclosure (PRO 30/24/5/293). Shaftesbury was a literal collector of fruit: he recorded 62 plums, 23 peaches, seven nectarines, 29 cherries, 42 pears, 12 summer apples, 13 baking apples, 29 winter apples, and 20 cider apples that total 237 different fruit tree varieties. In fact, Shaftesbury listed 20 unique locations for trees in relation to walls of gardens, small bridges and buildings that faced different directions throughout the manor grounds. Austen (1657) commented several times that fruits ripen faster and are of better quality when trees are planted against walls because the sun made the wall hot and extra heat was good for fruit. Evelyn's *French Gardiner* [1669:10] commented that fruit-bearing trees planted against walls, or "wall-fruits," were "the principal ornament of Gardens" not only because the trees bore flowers and fruits, but for the mechanical training of the limbs and trunk to grow perfectly with the course of the wall—exactly the kind of alteration of nature that provoked the birth of improvement almost a century before.

Shaftesbury wanted orange trees at his plantation immediately (SP 2000:440). The Percival Instructions show a deep interest in oranges and their Bermudan context—out of the 33 numbered orders, Shaftesbury mentioned oranges, orange trees and even orange blossom water in six of them. If he truly wanted orange trees to thrive in Carolina, he may have directed Percival to build walls specifically for additional warmth for orange trees based on his personal experience and information from the books listed above.
Locke was in France from November 1675 to May 1679 (Lough 1953a). While there, he toured wineries and learned how peasants worked vineyard soils and made wine from several grape varieties (Lough 1953a; Wood 1984:28-29; Unwin 1998). Locke traveled entirely on Shaftesbury's credit. His research and intelligence-gathering of winery and orchard workers strongly echoes the Salomon's House data-stealing "Merchants of Light" who "sail into foreign countries under the names of other nations (for our own we conceal), who bring us the books and abstracts, and patterns of experiments of all other parts" (Bacon 1913 [1627]:273). Shaftesbury metaphorically assumed the role of the "Lamps" of Salomon's House, who were scientists that gathered together the information and findings of the "Merchants of Light" and five other House "employments" in order to "direct new experiments, of a higher light, more penetrating into Nature than the former" (Bacon 1913 [1627]:274). Locke's "agricultural espionage" (Unwin 1998:150) conducted for Shaftesbury "with the needs of the Carolina colony in mind" (Armitage 2004:611) resembles the imaginary work of Salomon's House.

But Locke collected more than information in France: he collected trees, seeds and vine cuttings and shipped them to London for Shaftesbury and his wife. Beginning 25 November 1675, just 12 days after Locke left for France, Shaftesbury's steward, Thomas Stringer, wrote Locke about Shaftesbury's request for trees (DeBeer 1976a:434, no. 307). The following February, Stringer (DeBeer 1976a:437, no. 309) wrote Locke that Shaftesbury was happy to hear vines and seeds would soon arrive in London, and in April, Stringer (DeBeer 1976a:444, no. 311) reported to Locke that the orange trees he sent to Lady Shaftesbury were in good care and that Shaftesbury was pleased with the
"present of vine Cuttings." Lastly, melon seeds Locke sent arrived successfully per Stringer's letter 18 April 1678 (DeBeer 1976b:566, no. 378).

Shaftesbury recorded that Locke sent 12 pear varieties, three fig varieties and an unknown number of plum trees in February 1679, as well as 11 other fruit tree varieties and vine cuttings for grafts (PRO 30/24/5/293). Shaftesbury listed varieties of what he wanted Locke to send before he left France in 1679: five plums, seven pears, five peaches, and acorns from the cork tree (PRO 30/24/5/293).

The garden notebook primarily listed trees that grew at Wimborne St Giles. However, Locke's botanical shipments from France went to London; from London, plants went to St Giles's house as evidenced by the notebook, but some of what Locke sent may have been shipped to Carolina and St Giles Kussoe. Shaftesbury's (1682:7) personal account book listed a 10-shilling payment on a "bill for trees for Carolina" to John Wiseman, who provided many fruit tree grafts to Shaftesbury (PRO 30/24/5/293). The trees and vine cuttings that Locke sent to Shaftesbury may have been sent to St Giles Kussoe. If so, then those trees and vines would have been involved in a risky experiment: the propagation of plants sent from France, then to England, then to Carolina. Here, Locke assisted Shaftesbury in adhering to his own theory.

Several other books that were moved from Exeter House to St Giles's house detail orchard propagation and offer rich descriptions of many fruiting trees: Parkinson's Paradisi en sole (1629), Plat's Garden of Eden [1653/1660], Heresbach's Rei rusticae libri IV [The Four Books of Husbandry] (1595), and Markham's Way to Wealth (1631) and Country Farm (1616), within which Markham devoted 88 chapters to orchards. Lastly, a Transactions article detailed an experimental method for transplanting trees (PT
All of these books certainly contributed to Shaftesbury's decades of work on orchards and fruit trees; all of the methods in the books listed above could have been tried at St Giles Kussoe—Percival may have taken the *Garden of Eden* and *Country Farm* to Carolina for use. Orchards that were planted purely as experiments were allowed to grow and be altered, tamed and pruned until all information required was collected—a process that could have taken years for Shaftesbury's laborers to complete. Fruit may fall uncollected and rot on purpose because the growth and health of the tree, not the fruit, was the focus of the experiment. In essence: *scientific experimentation can allow for spoilage if the experiment was more valuable than what spoiled*. Science, then, could beat the Spoilage provision.

Besides fruit tree experience and several publications on orchards, Shaftesbury's eight volumes of *Transactions* contained 12 reports of various experiments on trees to understand the movement of sap and how to tap trees to collect it (PT 1668:0046, 0047, 0062, 0067; 1669:0008, 0019; 1670:0017, 0055, 0056; 1671:0007, 0012). One report from 1670 listed 10 different tree-tapping methods. Diverse hardwood species were identified in the colony in 1666 as "Oake, Maple, Ash, Wallnutt, Popler Bayes" (SP 2000:63), and on the Ashley River in 1671 as "white, red, black water Spanish, and live oak; Ash, Hickery, Poplar, Beach, Elme, Laurell, Bay, Sassaphrage [sassafras], dogwood, Black Wallnutt" cedars and cypress (SP 2000:333). The 1671 account also explained that the land was full of pine trees with prospective turpentine. Given the fact that people in England were spending years on experiments to understand how trees 'worked,' with so many tree types available for tests in Carolina, Shaftesbury may have had laborers
systematically tap trees for experiments throughout St Giles Kussoe, which would have prevented the forests from falling to spoilage and non-use.

Once experimental fruit orchards survived in their new Carolina setting, grafting experiments could begin. Shaftesbury grafted fruit trees at Wimborne for years and his garden notebook is full of cuttings and grafted tree entries (Christie 1871; Fleming 2007). It is no surprise, then, that six books on the May 1674 list include information on the science of grafting: Markham's *Wealth* and *Country Farm*, Austen's *Fruit=Trees*, Plat's *Eden*, Parkinson's *Paradisi* and Evelyn's *Gardiner* contain many chapters and sections on the art. A report in the *Transactions* is easily related to Shaftesbury's desires for orange trees, as it explained “the curious engrafting of Oranges and Lemons or Citrons upon one anothers Trees, and of one Individual Fruit, half Orange and half Lemon” (PT 1666:0050), as well as a general report on grafting apple and pear branches to similar root stock (PT 1673:0029). Another *Transactions* report entered by Richard Reed, Esq. from 1671 (0008) discussed successful grafting experiments designed from John Evelyn's *Pomona, an appendix concerning fruit-trees in relation to cider* that was appended to *Sylva* (1664). Reed reported that a “Crab (and Red-strake is no other) grafted on an Apple” received “gentleness, and softness, and largeness, and an excellent alloy to the sharpness, and (as Mr. Evelyn calls it) the *wickedness* of the Fruit” (PT 1671:0008, emphasis original). Grafted fruit trees would have been excellent Carolina experiments.

Besides fruit trees, Shaftesbury (SP 2000:444) wanted Percival to send "Samples of the timber of your Mast Trees, and of any Dying Drugs or any sorte of Tymber or Wood that is finely grained or sented that...may be fit for Cabinets and such other fine Workes." Shaftesbury wanted a "scheme of the Trade of Pipe [barrel] Staves" to know if barrels
were worth "our Tymber and Labour." As mentioned earlier, Percival was to experiment with plantation wood varieties to know what type was best for orange shipments (SP 2000:442). Lastly, cut and squared "stocks of the best Cedar" from the plantation were to always be freight in Shaftesbury's Edisto when it went to Virginia, Bermuda, or England—Percival recorded multiple export charges for plantation cedar between 1675 and 1679 (Percival Account 1680; SP 2000:441-442).

If an orchard was planted, Locke's Spoilage provision dictates that the fruit should not rot or go uncollected. If so, those trees should not have been planted or land enclosed. The collection of all the surplus fruit for cider production would have been an excellent way to uphold the Spoilage provision. Shaftesbury made cider in the seventeenth century; the Society encouraged cider production. Alongside cider, the preservation of fruits through drying and canning were also ways to prevent spoilage: the books by Evelyn and Austen, and Markham's Country Farm, discuss spirits and preservation, as well as a Transactions report (PT 1666:0037) on cider made from apples and mulberries.

GARDENS AS FIELDS OF EXPERIMENTS

Experimental plantings of vegetables, roots, melons and herbs at St Giles Kussoe would have helped justify the claim to all 12,000 acres and prove that good land was not going to waste for one main reason: the attempt to grow anything from the Old World was experimental. Even if the gardens and fields produced food that created a surplus, Shaftesbury and his agents needed to know if the crops and plants would thrive in the colonial setting. We must remember that no one in or outside Carolina, even after four years of local experience, truly knew if crops, plants, trees and animal husbandry would succeed. Success required time. That is why the Lords Proprietors continued to tell the
colonists to commit to trials, and why they paid attention to the news from the colony that Locke specifically filtered for them about husbandry, soils, weather and products.

Shaftesbury would have wanted to recover and utilize everything produced, grown and collected at St Giles Kussoe—to do so would satisfy the Spoilage provision, thus his claim of 12,000 acres. However, if trials proved successful, and the bounty was so surprisingly large that it was unplanned for—if the "Fruit of his planting perished without gathering" (II, §38)—then the lost, unrecovered harvest was justified as a product of scientific inquiry. A perfect example of this 'justified lost harvest' can be interpreted through Shaftesbury's instruction to Percival (SP 2000:442) to "trye English graine and to sow your English wheat where lyes a bed of clay which preserves the mould moister in drye wheather." If the wheat not only survived but created a massive potential harvest, then the scientific evidence that wheat could grow in Carolina if grown on specific soil was technically worth more than the harvest. St Giles Kussoe could be the generator of scientific knowledge to be replicated at other farms without the experimentation phase.

The books from the May 1674 list that detailed information for experimental plantings were Markham's *Country Farm* (1616), *Way to Wealth* (1631), and *The English Husbandman* (1635); Evelyn's *Gardiner* [1669], Heresbach's *Rei rusticae libri IV* [The Four Books of Husbandry] (1595) and Plat's *Garden of Eden* [1653/1660]. Archaeobotanical evidence for several plants listed in these books, as well as reports and queries of the Royal Society, was found at the Lord Ashley site within St Giles Kussoe in 2011 and 2013—these plants will be discussed later in Chapter 8 alongside other similar findings from sites at 1670s Charles Towne.
One clear example of a highly experimental and rare crop that Percival was ordered to test at the plantation was Irish potatoes (SP 2000:442). In the entirety of the 476 pages of colonial entries in the Shaftesbury Papers, 'potatoes' were mentioned nine times, while the only reference to Irish potatoes was in Shaftesbury's instructions to Percival. Before the 1660s, potatoes were "treated as exotics" and were "rarely found except in the gardens of the rich" (Prothero 1917:108), so any mention of potato in the Shaftesbury Papers (2000) can be interpreted as experimental. John Foster's *England's Happiness Increased* (1664) encouraged English farmers to grow "'Irish Potatoes'" instead of "Spanish, Canadian, or Virginian varieties" (Prothero 1917:108). Prothero (1917:108) made sure to mention that Forster's edict on Irish potatoes did not get adopted until the early nineteenth century, and that potatoes were only successful within enclosed, not open-field, farms. The fact that Irish potatoes were in a set of colonial instructions in 1674 demonstrates exactly how rare and cutting-edge Shaftesbury's ideas on agriculture and husbandry were at the time, regardless of location.

**INDUSTRIOUS LIVESTOCK**

The last way Shaftesbury could use personal experience and the May 1674 book list to adhere to the Spoilage provision was through the livestock on his plantation. One of the most important facets of St Giles Kussoe is that it was an enclosure with embankments and ditches on its property line, as GIS analysis indicates. In terms of the livestock on St Giles Kussoe, boundary ditches prevented both Shaftesbury's massive cattle herd from leaving the plantation, and would have prevented other cattle managed through an open-range system from entering the enclosure. The open-range system of cattle management forced farmers to fence in their crops against wandering cows.
(Zierden and Reitz 2016:86-87). However, this system created a lack of control over breed quality and specificity, whereas enclosure promoted selective breeding of cows (Hribal 2002:60). Instead of fencing crops, the entirety of St Giles Kussoe was 'fenced in.'

Enclosure also dictated, through Locke's provisions, that all of the possible natural products on the enclosed land needed to be collected and utilized or else that land should be viewed as commons and not private. Here, the open-range system and enclosure of wasteland were clashing systems. Colonists who wanted to range their cattle through the wastes of Long, Wampee and Cow Savanas would have found their path obstructed by a ditch and embankment their cows could not cross. The ranchers could complain Shaftesbury's enclosure denied them access to thousands of acres of interior and riverside wasteland full of cattle food. It was important for Shaftesbury to keep his hundreds of cattle inside because he was trying to conform to the Spoilage provision and needed his, not outsider, cattle to range throughout all his wasteland because it was enclosed.

Locke (II, §38) clearly stated that if "the Grass of his Inclosure rotted on the Ground" then that particular land "was still to be looked on as Waste." In a paragraph that Hinton (1974) suggests be removed in order to read Locke's Chapter 5 as an early 1670s product, Locke (II, §28) wrote "the Grass my Horse has bit...where I have a right to them [grass] in common with others, become my Property." 'Horse' can be replaced by 'Cow' and the meaning remains the same. Shaftesbury did not need cattle present, biting grass, to claim his 12,000 acres—as Lord Proprietor, with the power of the Palatinate, his right to claim an estate superseded Locke's "Horse has bit" process. However, to make his property follow Locke's rules, he needed his cattle to graze his wasteland.
Five books on the May 1674 book list detail methods on how to graze, feed, breed, pasture, milk, and cure all ailments befalling cattle: Heresbach's *Rei rusticae* (1595), Mascall's *The Government of Cattle* (1620), Markham's *Husbandman* (1635) and *Wealth* (1636), and Johnston's *Historia Naturalis Animalium* (1657). At Wimborne St Giles, Shaftesbury bred livestock (Wood 1984:22) and in 1668 had several of his own horse breeds (PRO 30/24/4/166) including one he named "Wainsford" in 1678 (Christie 1871:261). The inventory of cattle on St Giles Kussoe in August 1682 listed 25 bulls, which if all were only 24 months of age, by modern breeding standards, the bulls could have serviced 600 cows and heifers every year (Barham and Troxel n.d.:5). The 86 heifers and 173 cows total only 259 potential mates for the bulls. In 1680, Shaftesbury recorded a £200 sale of 50 heifers to John Smith, who settled across the river from St Giles Kussoe; it was the only sale of cattle during the 10 operative years of the plantation (Shaftesbury Account 1682:33). With a group of bulls that technically required a larger population of cows and heifers than present in 1682, and the opportunity to sell large numbers of cattle to prospective buyers in Carolina, it is clear Shaftesbury had satisfied and exceeded his intentions to have "300 to 400 cattle" on his plantation, and probably hoped to further increase his herd through the breeding program he sponsored. He may have also wanted to create his own experimental, improved cattle breeds that would rival all other colonial stock. If he created new breeds of horses, he could do it with cows.

How large of a herd of cattle was required to reach all acreage to eat all available grass, plants and shrubs? According to Otto (1987), one cow in seventeenth century Carolina required 15 acres of forest, savanna and/or marshland. Therefore, a herd of 300 required 4,500 acres while a herd of 400 required 6,000 acres. Shaftesbury had twice the
land as the larger acreage. If Percival directed his cattlemen to range only in the wastelands of the riverside, central freshwater swamps, and interior savannas, there was still enough wasteland to support roughly 150 more cows. In 1682, the 594-head herd required roughly 8,910 acres. However, if parts of the wastes were converted into floating meadows stocked with thick grass, the plantation could have supported a herd of cattle much larger than that. Floating meadows for cattle would have helped reserve uplands for crop fields, orchards and gardens, settlements, farm buildings, and other experiments that required high, dry ground. Lastly, as the herd size grew, the available forage in the wastes and upland forests would have probably become too thin from overgrazing by too many cows: lush grassy meadows, already in wasteland, would have been helpful.

THE "INDUSTRY" PROVISION

The Industry provision states that the larger the tract of enclosed land, the more labor and laborers were needed to systematically work on and improve the land. Therefore, the labor needs of the plantation were dictated by Locke's theory, to which Shaftesbury needed to comply. In Carolina during the 1670s, the majority of laborers were white indentured servants; Africans comprised a small but slowly growing minority (Wood 1974). When rice agriculture became the first export success from decades of experimentation, enslaved Africans became the favored and required labor force that eventually replaced servants (Wood 1974). Indentured servant contracts in Carolina usually lasted between one to five years (Wood 1974:40-41). Upon settlement in late 1674, an unknown number of servants were present at St Giles Kussoe until sometime after 1682 when the estate changed hands. After 1677, 15 enslaved Africans were on the plantation (Percival Account 1680; Stringer Notes 1684). In relation to the Industry
provision, the most important factor is that the servants would eventually leave after a set number of years, while the enslaved were bound to the land for life.

Therefore, slavery, not servitude, satisfied Locke's Industry provision and also helped the landowner prevent spoilage: *with enslaved Africans, industry was perpetual; industry could always reach everywhere, forever.* If servants began experiments grafting and training fruit trees, but left the plantation before work on the trees was complete, then the enclosure of land for those trees would have been a waste since the experiment was never finished. But if an enslaved African conducted those experiments, they would be on the land to work those trees for as long as they were healthy and alive. The experiments could therefore end and spoilage be avoided.

Furthermore, there was no limit to how far the land owner's industry could reach into their property when they had enslaved Africans present. Cattle were also an active part of the labor force and were an excellent way to satisfy the industry provision. Enclosure turned cattle into "an immense body of workers" alongside the laborers within the close (Hribal 2002:5, emphasis original). As a result, hundreds of cows and acres could be managed and utilized by just a few people. An account from 1692 revealed that 134 cattle were managed by only one enslaved African near Charles Towne (Wood 1974:31). At St Giles Kussoe in August 1682 there were eight males and seven females among the enslaved Africans who were purchased in January 1677/8 and likely arrived at the plantation later that year (Percival account 1680; Shaftesbury Account 1682:8). If one person could manage so many cows, and essentially reach so much estate land, then other laborers could be freed up so their "industry" could "reach" other locales.
But, labor and its reach was only as good as the manager in charge. Andrew Percival was who Shaftesbury decided to hire for his estate needs, and he probably settled on Percival due to the inabilities and inadequacies of the managers of the Lords Proprietors plantation. There are books related to Percival's role as manager and governor of St Giles Kussoe that appear on the May 1674 book list: Pulton's *Statutes* (1670), Fleetwood's *Justice* (1658), Dalton's *Justice* (1643), and Sheppard's *Constable* (1641). These books detail the laws and rules that can be broken in English society, the punishments and fines for each offence, and how peace officers should enforce law and order. Since Percival was supposed to settle families on St Giles Kussoe, he would have needed information to assist his management of groups of strangers that were to form a peaceful community. Here, Locke's Atlantis entries on titheingmen and the way he envisioned law and order for a colonial society should function are possibly relevant.

In Sheppard's *The offices and duties of constables, borsholders, tything-men...and other lay-ministers* (1641), there is a listing of the responsibilities and duties of the bailiff, or manager, of a manor. Besides having the power to collect their lord's rents from tenants and pay bills, the bailiff “may also order his Masters Husbandry”, improve the manorial lands, and, most relative to the Industry provision, “oversee and order the labors of other Laborers and Servants that are under them, about their Masters work” (Sheppard 1641:Chapter 17). Percival, then, had the opportunity to make sure the laborers were on task, that they were laboring on what was most important, that their work was efficient, and that their labor was what Shaftesbury wanted.

Lastly, horses at St Giles Kussoe would have assisted both managers and laborers with their needs to work the entirety of the plantation. Three books on the May 1674 list
focused entirely on horses: the Duke of Newcastle's *A New Method and Extraordinary Invention to Dress Horses* (1667), Thomas Gray's *The Complet Horseman* [1639 or 1651], and Blundeville's *Offices belonging to horsemanshippe* (1566, 1570 or 1593). These books were aids for English gentlemen who took their horses to fairs, used their horses for sport and races, and hunted on horseback. Travel by horseback would have allowed Percival the ability to get to any part of the plantation quickly, possibly within minutes. Horses allowed a cattle rancher to have full command of their herds. Shaftesbury was greatly invested in his horses and had a "love of horsemanship" (Christie 1871:168, 418), so it makes good sense that he not only owned these books, but would have wanted horses stocked at St Giles Kussoe.

**CONCLUSION**

When combined, the Locke Memoranda, colonial correspondence, May 1674 book list, *Philosophical Transactions*, Percival Instructions, and GIS analyses allowed me to strongly argue that St Giles Kussoe was the product of Locke's labor theory of property while the theory was in its infancy. My work has also created a potential model to use when investigating private property in early Carolina: an archaeological site within seventeenth century property in Carolina can have a specific material signature through artifacts and/or landscape. Seventeenth century English improvement and private property were strongly linked; therefore, the artifacts and landscapes of private property can represent the materiality of improvement.

This chapter has clearly demonstrated how a property theory could have been a blueprint for an estate like St Giles Kussoe. In the next chapter, I demonstrate how data are created from historic artifacts so that the materiality of the paradigm of improvement
can be identified at archaeological sites. Those data can then be utilized to better understand the materiality of seventeenth century private property in Carolina. To know whether improvement and private property are recognizable through artifacts, I compare and contrast the Lord Ashley site (c.1675-1685) from St Giles Kussoe to three sites of the same time period (1670-c.1690) within Charles Towne Landing State Historic Site. Then, in Chapter 8, I contextualize the private property-improvement material signature with the paleoethnobotanical remains from all four sites to interpret how private property and improvement both directed and altered the lives of the laborers who worked within and outside of Carolina's first private properties.
Figure 6.1. St Giles Kussoe plantation in relation to Charles Towne and modern Charleston.
Figure 6.2. A digital elevation model of St Giles Kussoe plantation (blue=wetter ground; brown=drier ground).
Figure 6.3. Digital elevation model displaying GIS analysis of historic wasteland (red=wasteland, 8,302.6 acres).
Figure 6.4. Digital elevation model of St Giles Kussoe displaying historic embankments in wasteland.
Figure 6.5. A facsimile of the 1716 plat of Wragg Savanna plantation, formerly St Giles Kussoe plantation (traced by author).
Figure 6.6. Map displaying known locations of seventeenth century floating meadows in relation to Wimborne St Giles (locations from Bettey 1977).
CHAPTER 7

A LOT IN COMMON: ARCHAEOLOGY AND THE MATERIALITY OF IMPROVEMENT

Through the last few chapters I have demonstrated how the development of Locke's theory dovetailed with his property aspirations in Carolina, and how he utilized improvement and husbandry literature as inspiration for use of his theory in a colonial setting. My analysis of St Giles Kussoe as an estate ecologically engineered through labor directed by Locke's property theory further illustrates the significance of adopting a property-oriented approach to the origins of a colony like Carolina. My study of St Giles Kussoe in Chapter 6 revealed how social engineering can turn a large tract of private property into an experimental colonial laboratory through the scientific political ecology created by the laborers bound to that property. Those laborers, in turn, were socially engineered by their experimental work that was a part of Shaftesbury's plan to modernize colonial property through the improvement of colonial labor.

But, private property already engineered society: some people were allowed into some places while others were rejected. One of the strongest examples of that spatial distinction is seen between the English commons and private property. To Locke the commons and wasteland was the same (Whitehead 2012). If the commons were claimed, they had to be improved. The presence of commons also made possible the expansion of estates. However, the commons were a traditional, essential and relied-upon component
of most English neighborhoods and towns, including early northern English colonial
towns in America (Hribal 2002; Labaree 1979; Sydney 1975).

The commons, however, was not a form of property; in fact, the commons were "the
antithesis of property" (Greer 2012:368). In essence, commons were really just lands that
were not yet private property. Recognizing the physical distinction between the common
and private property, then, identifies the social distinction that separated private property
owners from non-property owners who had to reside in and depend upon the commons.
An archaeologically-identified line between property and common can therefore be the
social boundary through which I interpret seventeenth century buildings and related
artifacts to gain a better, clearer understanding of the differences between the propertied
and property-less people who both became colonists together.

This property-oriented archaeological perspective creates a new context that allows
for the better identification and interpretation of the origins of the farm labor and
husbandry performed by the first farmers in Carolina. Also, the identification of the
places where those first farmers' labor was centralized will provide new information on
their lives, roles and positions in the origins of property relations between people in
Carolina. We can finally understand what the birth of English husbandry and
improvement in Carolina was if we first begin to understand the laborers responsible for
both. My work also provides new ways to interpret the lives of the private property
owners and how they grew into the socially elite planter class towards the end of the
seventeenth century into the eighteenth. Lastly, when the commons went away, the farm
buildings in the commons went away too. It is possible those early farm buildings were
transposed into plantations later.
My thesis is that the paradigm of improvement can be identified as a materiality, and if improvement occurred primarily inside of private property, then the materiality of improvement can identify a settlement or structure as a component of private property or the commons. This chapter details my research and analyses into two sites at Charles Towne to identify a material signature of improvement, which allow me to identify signatures for private property and the common. I then apply those signatures to the Lord Ashley site inside St Giles Kussoe to better understand Shaftesbury's laborers and Percival as an improvement-minded manager.

**THE MATERIALITY OF IMPROVEMENT**

After 1660, due in large part to the Restoration of Charles II to the throne, yeoman farmers' embrace of improvement brought them money that suddenly allowed for the acquisition of refined material goods (O'Connell 2013). Former peasants who were able to claim property in open field towns, enclose it and begin to improve it became yeomen farmers in the later sixteenth century and slowly grew in social stature and wealth through the seventeenth century (Allen 1992). O'Connell (2013) studied inventories of yeoman families in rural settings near London from the later sixteenth century to the 1720s. As agricultural improvement methods grew in diversity and scope they were more easily and readily adopted by farmers who did not have grand estates. Yeoman farmers took advantage and increased their wealth through the improvement of their lands, which helped them enter the social realm of luxurious living (O'Connell 2013:166-167).

O'Connell (2013:127-128) found that wealth increased by 107% over the century among the rural yeomen families he studied; this growth parallels the advancement of improvement first as mechanical methods and later as a philosophical paradigm designed
to help improve life as much as land and property. The period between 1642 and 1660 was dark, grim, uncertain and full of war under Cromwell's new form of government (O'Connell 2013:174). However, improvement did not slow down: improvers wrote new books and updated their older works, and the Gresham College and Oxford scholars formed their influential philosophy groups that would become the Royal Society upon Charles II's return. With the king restored, improvement was unleashed upon England in several ways—it was time to improve, time to embellish, and time to live again.

When Charles II returned "it was safe to smile, wear extravagant and beautiful clothes, to order carved and gilded furniture, [and] to indulge a taste for delightful inutilities" (Gloag 1964:76 cited in O'Connell 2013:174). The king seemed to affect any and all things. For instance, in 1662 he ordered the construction of 32 brick houses organized around a large square at Jamestown in Virginia (Miller 1999:75). While most of these houses were not built, the king's order to improve through architecture is evidence of his intention regardless if there was a comparable material reality to his written word. Improvement in the era of Charles II allowed people the chance to take advantage of refined living. While improvement may seem to relate mostly to agriculture and ways to make land more valuable, after the Restoration, people put the paradigm of improvement to work to better all aspects of their living conditions.

IMPROVEMENT FOR LUXURY GOODS

Improvement helped farmers engage markets they had not been able to in previous decades, which exposed them to the "accoutrements of elegant living: swords and watches, shoes, and hats, lace and velvet, furniture and fabrics, china and silverware" (O'Connell 2013:8). For instance, before 1550 furniture in a yeoman household was
generally rough, crafted out of a few pieces of wood and had little to no ornamental embellishments. By the early seventeenth century yeomen households that could afford it had at least one joined piece of furniture made by skilled craftsmen (O'Connell 2013:175). Joiners constructed furniture from prefabricated wooden parts like finely carved panels and boards, and arms and legs made by Turners who worked a lathe (Krill 2010:26-27). The "most imposing possession of all would have been a joined cupboard...[that] dominates the room, not only due to its size but also because of the objects displayed on it representing the family's wealth" (Eversman 2001:24). The return of Charles II brought about "innovations in furniture, form and style" (O'Connell 2013:174), and yeomen were able to acquire several pieces of joined furniture along with other things comprised from components and parts: tailored clothing, textiles, clocks, books and looking glasses.

Besides furniture, ceramic availability changed due to Charles II's policies. Where Cromwell taxed "Oriental wares including china" quite heavily, Charles II cut the duties (O'Connell 2013:182). The cost reduction of porcelain propagated greater demand in finer ceramics and the fancy cabinets that displayed them. Demand for rare Chinese ceramics was so great that Chinese potters studied European ships and people when docked nearby, learned the European tastes and fashion, and decorated their porcelains accordingly (Brook 2008:75). Towards the end of the seventeenth century porcelain became "the single most fashionable luxury in the homes of the European aristocracy" (Liu 1999:731). Indeed, the importation of fine Asian luxuries like silk, lacquered furniture and porcelain sparked growth in European markets: the demand for foreign pleasantries created the need to produce a higher quality and greater variety of other
The desire for Chinese wares was also infiltrating the homes of the improving yeoman farmer, and as they earned more they expressed themselves through *en vogue* material culture. O'Connell (2013:185-187) found that several yeomen family inventories throughout the seventeenth century listed porcelain and tea wares that comprised sometimes half to two-thirds of the household wealth.

Seventeenth century English Delft was a manufactured ceramic that had a refined clay body and a white opaque glaze with an enameled finish produced from a mix of tin oxide and lead (Garner 1948; Noël Hume 1977). The white tin-enamel glaze provided a palate for artistic designs, depictions of the king, floral motifs and various decorations reflective of the social climate (Dawson 2010; Garner 1948). In the first decades of the seventeenth century, Chinese porcelain began to stream into England and created a market demand that English potters took advantage of through their own wares: since they did not know how to make porcelain, "they began to copy it in tin-glazed earthenware" (Black 2001:5). As the century moved forward, Delft ceramics diversified: tin-enameled wares were designed to store cosmetics, drugs and ointments; for drinking posset and punch drinks that were not as hot as tea and coffee; for use at the table in either matched or unmatched dish sets; and to display fresh or dry flowers (Dawson 2010:28-29). Because Delftwares were so ornamental, "kitchen ceramics were decorated and decorative" when they were displayed beside Chinese porcelain on shelves or hutches (Pennell 2016:103). As a result of its popularity and noted refinement, Delft became increasingly prevalent in yeomen inventories from 1667 to 1680 (O'Connell 2013:186). Lastly, highly decorative hand painted Delft tiles adorned hearth walls and also dairies (Davis 1885:53)
Fine glasswares also grew in popularity with ceramic refinement as fancy glass decanters and goblets were displayed with ceramics. English clear glass production during the mid-seventeenth century produced a sought-after commodity. Efforts to make clear, refined glassware in England reached new heights after the return of Charles II as several new patents were issued to invent a crystalline glass (Noël Hume 1969:12-13). Experimentation supported by the Royal Society of London worked on ways to mimic Venetian glassware, considered the finest in the known world (Davis 1972:14-15). Fine glassware was a sure part of the improver's home.

Silver items were an essential item of luxury and the "staple among the wealthy and upwardly mobile" (O'Connell 2013:189-190). Books were also valuable and considered high luxury items not only because of the cost of the book, but the cost of the education behind the literacy requirements to read not only English but foreign languages like Latin (O'Connell 2013:187-188). Although valuable, books were usually lumped together and given a collective value with no description, whereas silver items commanded attention and each piece was counted, described, and priced in inventories.

The king did away with the "utterly conservative styles" that Cromwell had continued to hang on to, and as a result of the Crown's switch, yeomen followed suit to reflect both their newly increased income and style of the palace (O'Connell 2013:226). What is important to remember about the goods that improvement helped people buy—books, silver, pewter, linen and silk textiles, and decorative furniture—is that those goods were not essential to daily life. They were aesthetically pleasing adornments and luxurious forms of cheaper, more plentiful objects that already served life's needs: cups, plates, eating utensils, bed coverings, and fine furniture did not need to be fabricated
from porcelain, silver, silk and decorative exotic joined wood. Regardless, the newly earned wealth of yeomen farmers was spent on such items.

ARTIFACTS AS MARKERS OF IMPROVEMENT

If these kinds of materials were indicative of yeomen improvement, then objects were also indicative of yeomen’s private property: luxury items should have been just as much an expression of private property as they were of improvement. Regardless of the qualities, value or importance of any kind of object, the people in the past who used things did not always keep those things in perfect condition. Through daily use, ceramics and glasswares broke into pieces that fell on the ground, buttons on clothing came free and were lost, and mechanized things broke from use and wear. Almost all of these discards became refuse that was simply thrown on the ground outside or buried in holes, swept off of floors through doors, burned and moved elsewhere, or collected and thrown in a heap away from the habitation at organized or randomized locations. Archaeologists find that houses, the surrounding yard spaces, and the general loci of the habitation contain the majority of past refuse.

Historical archaeologists recover thousands, sometimes tens of thousands of artifacts from past habitations and larger settlements. Artifacts from such sites include architectural debris like nails, window glass fragments, brick and mortar rubble and iron hardware for doors and windows; personal debris such as buttons, combs, mirrors, small refined music or perfume boxes, and jewelry; broken tobacco pipe fragments; and kitchen refuse like ceramic sherds, glass bottle fragments, and eating utensils. Besides ceramics needed for dining, other ceramics are found that represent different kinds of activities: Chinese porcelain and refined ceramics were used for drinking tea, thick utilitarian lead
glazed earthenwares were required for changing fresh milk into cheeses and butter, and heavy stoneware containers stored dairy products and oil. Hundreds or thousands of ceramics can be recovered from an archaeological dig, and overall ceramic counts can be useful to see the distribution of ceramics across a site and how they contribute to an archaeologist's interpretation of the creation of the archaeological record (Voss and Allen 2010). Ceramic sherds are useful for understanding sites, but not necessarily people.

To quote Barbara Voss (2010:2), "people don't use sherds; they use vessels." One plate and one bowl could produce 11 and 111 fragments respectively. Together, the two vessels represent 122 ceramic sherds. Here, the ceramic count, which is high, hides the reality: there were only two vessels to begin with. To get at vessels instead of sherds, a Minimum Number of Vessel (MNV) analysis can be conducted (Voss and Allen 2010). The archaeologist sorts all recovered ceramics into ceramicware type categories, and then further sorts each ware type into the fewest number of possible vessels. All rim fragments are scrutinized against each other until the fewest unique vessel possibilities remain. The unique rims are then utilized in the MNV analysis. If only body sherds of a specific ware type are recovered then the most unique body sherd/s of that type can be used in the MNV. Once decisions on the MNV sherds are finalized, qualitative information is collected on forms that record colors, firing techniques, erosion, evidence of thermal alterations, decorations and vessel form and functional attributes. Voss's and Allen's (2010) methodologies for creating MNVs for ceramics, glass vessels and refined metal objects were adopted for my analyses.

As Voss and Allen (2010:9) explain, an MNV analysis can be applied to non-ceramic and glass objects like metal canisters and clothing parts. An MNV analysis was
conducted on brass and silver objects from Charles Towne and the Lord Ashley site. Some of these metal objects are identifiable as buttons, furniture hardware like drawer pulls or upholstery tacks, horse saddle hardware, buckles for clothing and articles with straps, and sewing thimbles. Other items cannot easily be attributed to a known object, like scraps of brass sheeting, cut fragments of silver, brass wire, and finished brass adornments and finials that could have been on all sorts of things—a chair in a room or a seat in a carriage. If a metal object was unique then it was counted as a "fancy" metal object; if more than one similar furniture tack was present, it was counted as only one tack since all of them could have been on one cushion.

The MNVs analyses on European/English ceramics, glasswares, and refined metals draw from O'Connell's (2013) work. The European/English ceramic MNV made Porcelain and Delft visible as markers of improvement, which were paired with leaded tableglass vessels from the glass MNV. The count of fancy metal objects from each building at each site was contextualized with the Porcelain, Delft and fine glass vessels. Lastly, architectural artifacts, indicative of permanency and reflective of improvement, were scrutinized against markers of improvement from the MNVs.

PROBLEMS WITH LOCALLY PRODUCED POTTERY: COLONOWARE

My fourth MNV analysis was conducted on a pottery commonly identified as Colonoware. Archaeologist Leland Ferguson (1980, 1992) changed the name of this kind of pottery from its original name, Colono-Indian ware, which was a label created by archaeologist Ivor Noël Hume based on his work in Virginia. Archaeologists were finding pottery that could be classified as Colono-Indian ware on eighteenth century plantation sites along the South Carolina coast inhabited primarily by enslaved Africans.
(Anthony 1986; Wheaton and Garrow 1983). The pottery did not exhibit traits indicative of already sequenced and identified Native American pottery from the seventeenth or eighteenth centuries. Therefore, Ferguson and others believed that this kind of Colono-Indian pottery was also made by African and European, not only Indian, hands, and as a result Ferguson (1992:22) decided to drop the "Indian" label from the ceramic name in order to reflect the colonial origin and context of the ceramic—"Colono" represented "Colonial" and could include native, African and European influences.

Colonoware is commonly the majority of artifacts recovered from eighteenth, and some nineteenth century plantations over the last 40 years of excavations, particularly at slave cabin and village sites (Agha et al. 2012; Anthony 2002, 2016; Ferguson 1992; Ferguson and Goldberg 2019; Isenbarger 2012; Isenbarger and Agha 2015; Joseph 2011). As a result of its preponderance, which amplifies its importance, this pottery type has been intensively studied for more than 30 years, and at times, studies have become hotly debated. Much of the debate is around the ethnic and/or racial identities of the potters themselves, and, if West African religious and medicinal practice can be identified through Colonoware (Epperson 1999; Espenshade 2007; Ferguson 1992, 1999, 2007; Ferguson and Goldberg 2019; Steen 2011). Colonowares have also been sorted into archaeologically determined typologies based on vessel firing techniques, clay composition, presence of additives to the clays like coarse sand inclusions, and vessel thickness (Anthony 1986, 2002; Brilliant 2011; Isenbarger 2012). Such types were given the labels "Yaughan" (Wheaton and Garrow 1983), "Lesesne Lustered", (Anthony 1986), and more recently "Stobo", which is a type-name specifically crafted to identify Native American influences and manufacture within Colonoware assemblages (Anthony 2016).
However, while analyzing the Colonoware from the Lord Ashley site, Isenbarger (2012:78) identified an anomaly in the identification and analysis process. She found that while some of the 1,073 Colonoware sherds could be categorized into definable categories like Yaughan (n=8) and Lesesne (n=117), and some of the historic Native American pottery could be categorized as well (n=339), there were several paste varieties paired with vessel thickness and finishing techniques that defied placement in any category (n=382). Isenbarger (2012:73) found through her research that although some Colonoware scholars believe they have been able to create unalterable ceramic typologies for their ceramic assemblages, "there is still a large amount of variation that we have yet to define or set terminology for."

Therefore, I forego the label "Colonoware" and instead refer to this pottery type as "Handmade Low-fired Earthenware" (HLE). HLE takes into account the overall mediocrity and ubiquity of most Colonoware assemblages in South Carolina: this pottery is usually the most numerous of all ceramics recovered on plantations, Colonoware is almost always undecorated, the assemblages are fragmentary at best, and almost 40 years of scholarship has assigned the pottery to ethnic groups by default with little to no cross-comparative scrutiny between Carolinian and West African pottery assemblages.

Previous analyses have shown that there is more ceramic variability than there are definable typologies within conventional Colonoware assemblages on most, if not all, sites from the seventeenth through the early twentieth century (Agha et al. 2012; Isenbarger 2012:78). The gradation of Colonoware into set, unchangeable types based on specific vessel attributes does not take into account the variability of local clays; clay access by enslaved and marginalized peoples; the restrictions placed on pottery making
by internal, unbreakable cultural and social taboos (Gosselain 1992, 1999); and, the environment, which no one had control over—all of these restrictions and natural realities were not identical from plantation to plantation. While colonialism may have been the impetus behind Colonoware creation (Ferguson 1992), the environment, nor any specific ecological setting, has not been considered to be a major influence in the production of that pottery: England may have been an all-powerful colonial force, but not even the English could stop the rain so pots could properly dry out to survive the firing process.

Lastly, the type-labels Yaugahn, Lesesne and Stobo were derived from the locations where the type was defined: the plantations that held the potters prisoner. More so, the names given to those prisoners' pottery are the same family names as the planters who created those plantations and owned those potters. Because Colonoware has not been decolonized and given the true post-colonial treatment it sorely needs, nor has the pottery been rid of its racially- and ethnically-oriented research agenda, I refuse to use the Colonoware type name or follow the current scholarship on that pottery. Rather than attempt to define the ethnicity of the colonial potters who made it, I recognize HLE as pottery representative of the needs of colonial laborers regardless of their skin color, continent of origin or social position and background.

My work on the HLE from Charles Towne and the Lord Ashley site, when scrutinized through property theory and contrasted against the material culture of English improvement, has identified a tentative correlation between buildings related to farm labor and a high amount of both HLE vessels and sherds. I can better understand the lives of farm laborers on seventeenth century Carolina sites by juxtaposing sites within private property against those outside. My theory is that farm laborers' daily activities left behind
a different material trace than their propertied counterparts, and the archaeological records should be reflective of differences between peoples' social relation to property and the commons. To find those differences, the commons must be identified. Below are examples of seventeenth century impermanent architecture on farms and the commons in England, and evidence of such structures in colonies prior to 1670. This information helps identify structures at Charles Towne and the Lord Ashley site as examples of classic English farm-related architecture.

SEVENTEENTH CENTURY BUILDINGS ON FARMS AND COMMONS

A few impermanent architecture types have been identified on seventeenth century sites in Virginia and England—buildings general to farms and the commons (Carson et al. 1981; Tankard 2011; Woodforde 1969). One impermanent building style similar to those found in the Caribbean and American colonies was a "cratchet" (Carson et al. 1981:153-154). "Cratches", "crotches", or "crutches" were names for the forked poles that comprised the structural posts that were placed in holes in the ground; these poles helped create the walls of the building. From my observations of the construction of a small cratchet for wood storage at Charles Towne Landing in October 2014, I learned that the hallmark feature of cratchet construction boils down to common sense: the most important thing is that the "crotch" or forked tops of the wall posts line up so that the plate—the beam that supports the roof at the top of the wall—can lie along the forks (John Hiatt and C.J. Ohlandt, personal communication 2014). Hiatt and Ohlandt stressed that the top of the wall, not the bottom, needed to be straight, otherwise the roof risked future collapse. Young branching hardwood trees have a fork at their trunk tops that provide a natural crutch-shape perfect for a quickly-made cratchet wall post. Not all of
the trees may be straight. If so, the postholes create a crooked line on the surface and below the ground, which can be recognized through archaeological posthole features.

To create the cratchet walls, thin young saplings, called puncheons, are wedged between the ground and the plate to be forced into the spaces between the wall posts. Before puncheon placement, a shallow trench is dug between the posts and the puncheons are scratched and wiggled into place. Next, vines and thin pliable saplings or thick strips of wood are woven horizontally through the puncheons to create a mat-like surface. Windows and doors can be created during this phase of construction. Once the walls are complete the roof is erected. Clay, sand, straw and water mixed together and applied to the woven walls create daub, which acts like plaster and seals the room. Finally, the roof is thatched and the cratchet is complete.

People referred to the homes squatters built on the English common as "'huts' or 'cotes'" and not cottages or houses because of the impermanent architectural styles used (Tankard 2011:34). Another version of cratchet-style impermanent architecture was the cruck-style cottage of the fifteenth and sixteenth centuries, which were houses simply built from "pairs of tree trunks...stuck in the ground, tied at the top and linked horizontally by a ridge pole" (Woodforde 1969:73). The walls of crucks were built the same: out of a "wattle" of woven strips of wood that was "clay-daubed" (Woodforde 1969:73) or "'breaded' (that is, daubed)" (Tankard 2011:32). Ground hearths, not chimneys, were the norm and smoke left through windows and doors. Archaeologically, the signature left behind by buildings like these should include few nails, little to no brick and mortar rubble, and clay daub that survived due to thermal alteration from either sunlight or fire.
These impermanent architecture styles were familiar on both English commons (Tankard 2011) and English farms (Carson et al. 1981:139-140). While cottages built in the commons were not always impermanent in style and construction, many were fashioned illegally and hastily with local, natural resources (Tankard 2011). The colonial origins of "Massachusetts Bay to the Carolinas" included the need for "huts, hovels, tents, cabins, caves and dugouts" to serve as initial habitations for the first few weeks after ships landed (Carson et al. 1981:139). These first buildings, however, were not improvisations based on basic forms, constrained by local unfamiliar resources and urgency. Rather, buildings of this quick, crude construction were "houses with antecedents" based on English memory "from home" (Carson et al. 1981:140). These buildings were also useful in agricultural settings because they were easily and cheaply built and if they were not going to serve as a fulltime habitation, impermanent buildings were replaceable as needed.

Wattle-and-daub walled cratchet-style houses were commonly built as houses for enslaved Africans on Barbados during the seventeenth century (Handler and Lange 1978:52-53). They have been tentatively identified on eighteenth century sites in Virginia and South Carolina as slave cabins (Ferguson 1992:56, 64). Denyer (1978) reports this architectural style in several locations in West Africa. Descendants of enslaved Africans recalled stories of their kin who once lived in wattle-and-daub houses before they left their home continent (Jones 1985:199). While enslaved Africans have been connected to wattle-and-daub architecture, they were not the only people familiar with that style of construction; nor were they the only laborers in 1670s Carolina who may have relied
upon that architecture for their daily labor requirements. Tangible distinctions between private property and the commons helps reveal who built and used such buildings.

EVIDENCE OF A COMMONS AT CHARLES TOWNE

In 1969, historical archaeologist Stanley South conducted excavations to verify the location of 1670s Charles Towne. He discovered a large moat that appeared to defend the wharf and original landing site at Old Towne Creek on the west bank of the Ashley River. The location was named Albemarle Point. After 1679 the townspeople moved to Oyster Point, or today's Charleston peninsula. South (2002) also found a long ditch north of the moat that he interpreted as a fortification ditch that supported a defensive log palisade wall for the town fort. Important to my landscape analysis, South (2002:57) believed that the ditch was on the north and east side of the palisade wall, and the space to the west and south between the palisade and moat was the interior of the town's fort.

The granted properties were drawn in 1671 by surveyor John Culpepper (Figure 7.1). The legend on the 1671 Culpepper map lists the owners of the alphabetically-labeled 29 properties and a description of a 20-acre "small division" of land—the only unlabeled parcel on the map—that contained "two acre & 4 acre lots belonging to Hugh Carterett George Beadon & others" (SP 2000:340). South (2002:20, 57) connected the palisade ditch he found to the "small division" property line on the 1671 Culpepper plat since both features had the same 123° angle. The fortification ditch, then, was an enclosure that encapsulated the small linear properties. The small lots were bound to the south and west by the property line, to the north by a large private lot, and to the east by the river marsh. What, then, was the land to the west and south of the property line? The town fort, as South (2002) suggested?
On the 1671 plat (Figure 7.1), there are no defined or labeled properties in this space. To the west of the words "Charles Towne" is a "&" symbol that Culpepper described as "pine Land which is generally Refused" (SP 2000:340). Land "generally Refused" was most likely identified by everyone as wasteland. Instead of the fort, the land directly west of the property was an open common where cows could graze and gardens could be kept.

Shaftesbury sent a letter to prospective colonial governor Sir John Yeamans 18 September 1671 that listed explicit details about the commons that was to be at Charles Towne (SP 2000:342-344). Yeamans was to "leave a Common round the Towne" and to prevent encroachment on the common by enclosures (SP 2000:343). Shaftesbury (SP 2000:343) then evoked his identity as an encloser: "This [the common] will add convenience, Beauty and security to the Place, and will afford roome to enlarge or better fortifye the Town hereafter." Town residents were "to make use of this Common to Plant sow Corne or make Gardens" and to graze cattle (SP 2000:343). When 1671 Charles Towne and 1640s Sudbury, Massachusetts are compared (Figures 7.1 and 7.2 respectively), a very similar property-common configuration can be seen at both towns: small linear lots that fronted a common pasture or field.

Besides the town, St Giles Kussoe had different kinds or qualities of commons within its enclosed space. Shaftesbury (SP 2000:440) instructed Percival to assign families who desired to settle on the estate a fifty-acre home lot that included "ten acres in ye Comon Cow pasture, and thirty five in a peece beyond ye Comon." English manors usually enclosed wastes and commons within them, where the rights to those lands were restricted to specific tenants of the manor by their manorial lord (Shannon 2012:170-
A better understanding of the kinds of commons in Carolina can provide new insight and more clarity for our interpretations of seventeenth century archaeology sites.

The spatial identification of the Charles Towne common forced me to reassess the archaeology Michael Stoner and Stanley South (2001) conducted west of the palisade wall in what they believed was the fort. Recent reanalysis of Structure 1, the 1670s building defined by Stoner and South (2001), supported my identification of an artifact signature for the materiality of the commons. The identification of the commons, then, prompts the reinterpretation of the land east of the commons as the post-1671 two- and four-acre small private lots. On one of those lots lies a site that can now be interpreted as a 1670s-era residence and business related to the development of private property in 1670s Charles Towne. My interpretations and analyses of this site are described below.

**IMPROVEMENT OF THE PRIVATE TOWN LOTS-THE MILLER SITE**

What archaeologists currently call the "Miller site" was discovered in 1968 by archaeologist Johnny Miller who preceded South's search for the 1670 town site. This site sits against the river marsh at the end of a spit of high ground formed by old natural spring drainage basins. Miller (1969) interpreted the site history as first, the potential house of French Huguenot James Le Sade who bought the old town site and properties of Charles Towne from the Lords Proprietors in the late 1690s, and next, the site of a mid-eighteenth century tavern. He based his interpretations on European ceramics he thought were eighteenth century, a statistically-derived date from fragments of tobacco pipe stems, and a massive amount of dark green wine bottle glass (Miller 1968; South 2002:41).
In 2009, South Carolina State Parks archaeologist David Jones and Charles Towne Landing staff conducted excavations at the Miller site to explore the tavern hypothesis. Those archaeologists discovered a large portion of a poured lime, or plaster, floor (Figure 7.3). The ground floor of the building was either one- or two-roomed. A brick hearth was found in the north wall of the building. The structural support foundations for the walls were brick piers. The spaces between the piers were walled with brick. The ground floor within the brick walls was paved with lime that has the appearance of mortar. The proveniences I analyzed are soils only above the lime floor and the soils and demolition rubble associated with the use and loss of the building.

Further assessments of the property history for the small two-and-four acre lots reveal the possibility that the Miller site was developed by George Beadon who Culpepper referenced on his 1671 plat. Beadon was an original settler and member of Carolina's first parliament (SP 2000:176). He was also a cooper and his colonial appointment was proofer of all pipe staves produced by the colony for export (SP 2000:358). Culpepper also mentioned Hugh Cartwright, who was listed as possessor of a two-acre lot as described in a land transaction July 1672 wherein the town common was used to create a new 1-acre lot (SP 2000:408). The southernmost small lot was no larger than two acres and the property line defines its southern edge; therefore, the Miller site, on Beadon's four-acre lot, is directly north of Cartwright's lot. More work is required to test this theory, but based on current archaeology (Nicole Isenbarger, personal communication 2020) and archival records, the Miller site was most likely Beadon's home and barrel-making shop.
The Miller site proveniences utilized in this analysis date to the post-1671 private property-era of Charles Towne. Currently, there is possible evidence of the original April 1670 settlement and fortifications directly underneath and adjacent to the lime floor, brick foundations and demolition rubble (Nicole Isenbarger, personal communication 2020)—none of those lower, older proveniences were utilized in my analyses. Therefore, the proveniences thought to be eighteenth century by Miller and South (2002) instead dates from 1671 until sometime in the 1680s.

MILLER SITE ARTIFACTS

My analysis included 52 select proveniences from the Miller site block excavation (refer to Figure 7.3). Seven artifact types were the basis of my analyses: ceramics, glass, HLE, tobacco pipe, nails, window glass and fancy metals (Table 7.1). I attribute 9,262 artifacts to the post-1671 private property-period of site occupancy and use. The most numerous artifact is wine bottle glass (n=5,090). There are 576 European and English ceramic sherds and 500 HLE sherds. Lastly, the 909 nails and nail fragments paired with the 1,481 pieces of broken window glass are clear indicators of a building constructed from hewn timbers, beams and boards that had walls with large paned windows.

Fifty-six unique English and European vessels were identified through the MNV analysis. Besides vessels, one Staffordshire slipware ceramic candlestick holder and one Delft fireplace tile are included in the MNV to comprise 58 ceramic objects. Twenty-nine (50%) of the 58 vessels are utilitarian. Vessels used for drinking (n=20) include 13 Staffordshire slipware mugs, one Mottledware mug, four brown saltglazed tankards, and two small Rhenish blue cobalt decorated saltglazed stoneware jugs for serving and storing beverages. Vessels used for storage (n=3) include one Spanish olive jar-type
vessel that is unglazed, one brown saltglazed stoneware jug with sporadic blue cobalt staining, and one unidentifiable but unique gray bodied saltglazed stoneware vessel that is most likely a jug or crock. The remaining six utilitarian vessels were used in dairying activities. Vessels used to process raw milk include a North Devon gravel tempered ware creampan, two lead glazed redware creampans and one lead glazed Borderware creampan; the vessels used to churn butter are a brown saltglazed stoneware crock and a North Devon gravel tempered ware crock.

One redware vessel that could be utilitarian is unlike any other vessel on site. Based on the lip-rim sherd for this vessel, its vessel form was like a creampan, it was 36" inches in diameter, the lip thickness is 3.9cm and the body is 2.23cm thick. Woven cord impressions on the rim parallel the lip and the interior is greenish yellow lead glazed. Four unique lead glazed redware vessels with indeterminate vessel form and function were also identified. Lastly, tablewares not reflective of nicety are represented by two Staffordshire slipware plates.

Ceramics reflective of nicety include 15 Delft and two blue hand-painted Chinese export porcelains; these 17 vessels comprise 29.3% of the MNV assemblage. Of Delft there are five bowls, four plates, one porringer, one cup, three hollowwares and one unidentifiable vessel form. Nine of these Delft vessels are blue hand-painted; one small bowl is highly refined and extremely thin (lip=1.19mm, body=2.19mm); and another bowl has a highly ornate robin-egg blue tinted tin enamel glaze with fine purple and blue hand-painted decoration. The Chinese export porcelain vessels include a plate and an ornate molded saucer. O'Connell defines vessels like these as indicative of a yeoman improver in England during the 1660s (O'Connell 2013). Paired with the fancy ceramics
are three clear leaded glass goblets. These 20 vessels were reflective of nicety and improvement—they were certainly reflective of someone who was developing their private property within the improving world of Charles II.

The HLE MNV at Miller site total 13 vessels; seven are jars and six are bowls. The only identifiable Native American pottery on site is assigned to the Woodland period (c. 3000 to 1000 bce) (Scurry 2015); these were not used in the MNV. There are no identifiable seventeenth century Native American stylistic decorative features or surface treatments on any of the 500 total HLE sherds. Therefore, the HLE was most likely produced by enslaved Africans or indentured servants that labored on the private lot and also in the common since lot owners had rights of grazing and farming on the town green. The ratio of HLE (n=500) to manufactured (n=576) sherds is 1:1.15, which is relatively similar, while the ratio of those ceramic MNVs is 1:4.4, which is highly disproportionate compared to the other 1670s site components in my study. Lastly, manufactured vessels are 81.2% of all 69 vessels while ceramics reflective of luxury (n=18 including the Delft tile) are 32% of all manufactured vessels and 26% of all ceramic vessels. These data suggest that ceramic preferences signaled the kind of refinement improvement afforded.

Lastly, there are 10 brass objects and one silver thimble. The brass objects include three small rings of different diameters (not worn on fingers), a buckle, a button, a tack, a piece of brass hardware, and two fragments of two different brass objects. These 11 metal objects, the 18 luxury ceramic vessels and three fine glasswares were used comparatively in the analysis and interpretation of Structure 1 and the Lord Ashley site in order to further define the materialities of improvement, private property and the commons. The permanent architecture at Miller site paired with the large amounts of window glass and
nails that comprise 25.8% of all 9,262 artifacts give the site an almost urban appearance, which is further evidence of the improvement of the property.

STRUCTURE 1 REPOSITIONED AND REDEFINED

Fieldwork in 2000 revealed the architectural footprint of an impermanent building that is named Structure 1 (Stoner and South 2001). This building was interpreted as a hybrid of English frame construction and Barbadian vernacular architecture positioned in the town fort that was utilized by infantrymen who defended the 1670s town (Stoner and South 2001:89). Structure 1, as a block-plan post-in-ground building, would have had straight, short, regularly spaced posts placed in the ground and leveled with a beam spanning their tops; a framed wall would then be raised on top of the beam (Carson et al. 1981:149-153). Instead, due to the need for expediency at Charles Towne, the posts for Structure 1 were put in the ground askew and not in straight lines because the beam could be wide enough to rest on parts of all the posts. Framed walls were then raised.

Later, South (2002:288) reinterpreted Structure 1 as a house or dwelling built by "servants, slaves and soldiers" who "apparently brought with them a vernacular house style they were familiar with in Barbados." Through my property perspective, Structure 1 was in the common, which means it was communal property that was not owned. Therefore, this building really could not have been anyone's 'dwelling' and was instead a communally shared farm dependency. South (2002:288) also claimed Structure 1 was built by wattle-and-daub construction, which he connected to a Haitian wattle-and-daub house documented in John Michael Vlatch's work on the West African origins of traditional African-American folk architecture (South 2002:288; Vlatch 1991:201-202). But, in the commons, Structure 1 could have been built in the English style of a cratchet
or a variation on that theme dependent on local resources. My analyses of the artifacts are
detailed below along with new interpretations for how to address seventeenth century
structures on historic sites near 1670s Charles Towne.

STRUCTURE 1 - ARTIFACTS

I reanalyzed 3,292 artifacts from the proveniences related to Structure 1: 3,145
artifacts are from 15, 10x10' foot units and 147 artifacts are from 38 soil features. When
compared and contrasted against the Miller site assemblage, there are clear artifact
indicators that demonstrate material differences due to property distinctions (Figure 7.4).

European and English ceramics comprise more of the assemblage at Structure 1
(n=360 or 11%) than the Miller site (n=576 or 6.2%) (Table 7.2). Bottle glass fragments
differ greatly between Miller (n=5,090 or 55%) and Structure 1 (n=105 or 3.2%).
Although tobacco pipe fragments are somewhat closely related by count (Structure 1,
n=759; Miller site, n=695), by percentages (Structure 1, 23%; Miller site, 7.5%) they
differ greatly. At Miller site there are 1,481 window glass fragments (16% of 9,262
artifacts); at Structure 1 there are none.

The most lopsided artifact difference between these sites is seen through HLE. Until
my recent work on this site, the HLE count was zero sherds. Although hundreds of sherds
identified by Isenbarger (personal communication 2001) as Colonoware were recovered
from the block excavation units and features that comprised Structure 1, the report
detailing Structure 1 (Stoner and South 2001:43) states that Colonoware and Colono-
Indian ware was found, but these ceramics are never mentioned further and never
quantified or qualified as a component of the archaeological project. Making matters
more complicated, Isenbarger's original 2001 unpublished analysis has been lost. I
worked with Isenbarger, the current archaeologist at Charles Towne Landing, on the reanalysis of this pottery to finally incorporate it into the 1670s contexts.

The recent reanalysis of Structure 1 identified 1,979 HLE sherds among 3,292 total artifacts. HLE now comprises 60.1% (n=1,979) of the Structure 1 assemblage, while HLE is only 5.4% (n=500) of the Miller site assemblage. The HLE sherds and MNV from Structure 1 allowed me to interpret the building in new and entirely different ways. First, 1,502 sherds of HLE, or 76% of the HLE assemblage, was recovered from the 10x10' foot units that revealed Structure 1. Second, there are sherds that crossmend between both the features and units that evidence Structure 1 (Figure 7.5). These connections integrally tie the HLE to the support posts that made the walls of Structure 1, the storage and/or trash pits within and around the building, and the midden soil and trash accumulation from daily use of the building and local area. Much of the HLE may have also entered the archaeological record when Structure 1 was either torn down or burned to make way for a new, fresh building.

STRUCTURE 1-ARCHITECTURE REDEFINED

Besides the extreme architectural differences between the sites, the architectural debris recovered at Structure 1 mirrors the contrast. Nails (n=84) comprise only 2.6% of the artifacts from Structure 1 and its yard space; however, the six excavation units that revealed Structure 1 only produced between five and eight nails each. Those units were 10x10' foot squares. At the Miller site, some 5x5' foot units within the footprint of the building produced 32, 55 and even 116 nails. Based on this evidence, nails were not a major requirement for Structure 1, which supports South's theory (2002:288) it may have been a Caribbean-influenced wattle-and-daub building. The nail evidence also supports
my theory that Structure 1 was an *English*-influenced wattle-and-daub building. There is daub present that further supports wattle-and-daub architecture in the Structure 1 artifact assemblage; more labwork needs to be done on these artifacts to determine if the daub was made and used by colonists or the Native Americans who inhabited this area sporadically for almost 3000 years (South 2002). Daub quality ranges from sandy and very friable to strong and hard similar to brick. Based on my reanalysis of the posthole features and artifacts associated with Structure 1, I extended the interpreted south wall of the house southward by two feet.

**STRUCTURE 1 AS MATERIALITY OF THE COMMONS**

The European and English ceramic MNV for Structure 1 is 13; the MNV for Miller site is 58. Eight (61.5%) of the 13 vessels at Structure 1 are utilitarian: four Barbadian redwares of unknown vessel form, one saltglazed stoneware jug for storage, one manganese Mottledware tankard for beverages, and two lead glazed redware vessels of indeterminate hollowware forms. The remaining four vessels are Delftwares: two white saucers, a blue hand-painted cup or bowl, and a white Delft ointment pot. Besides these vessels there is a white Delft candlestick holder.

Two wine bottles and one clear leaded goblet comprise the glass MNV. No Chinese porcelain was found in context with Structure 1. Of refined metals, there are three two-holed small brass hinges and a small brass mechanism part. Because those hinges are identical and could have belonged to the same object, only one is included in the metal MNV. The candlestick, the four Delft vessels, the goblet, and the two brass objects total eight items reflective of improvement. I identified 28 similar items at the Miller site.

Interestingly, the percentage of luxurious items at both Structure 1 and the Miller site
total 0.1% of the entire site assemblages. However, the kinds of objects—porcelain, a
diversity of Delft vessels, a silver thimble, and brass rings possibly for bed curtains—at
Miller site speak to an affluence that Structure 1 seemed to lack. Because the building
was not in private property it was almost certainly not someone's private residence. At
best, it was a building that a group of laborers frequented and possibly used as a hub for
work in the commons.

The last artifact class and MNV to discuss for the Charles Towne sites are the HLE
vessels and sherds at Structure 1. As mentioned earlier, HLE at Structure 1 comprises
60% (n=1979) versus just 5.4% (n=500) at Miller site. Besides this, the HLE MNV for
Structure 1 is 37, while at Miller site it is only 13. All 37 HLE vessels at Structure 1 were
most likely produced by a few enslaved African potters because no stylistic attributes
such as surface treatments, lip or rim forms, or vessel construction techniques
synonymous with known later seventeenth century Native American pottery varieties
have been identified in this HLE assemblage. Of these 37 vessels, 14 are jars and 24 are
bowls. Many of the body sherds from basal areas of jars show signs of exposure to
intense heat from use; several sherds are friable due to use of a weak clay fabric or bad
firing attempt.

The HLE vessels were likely used to port water and store, transport, cook and eat
food. The HLE vessels are interpreted as common day-use pottery that enslaved Africans
and indentured servants could use when tending to the needs of the commons around
Structure 1. It is probable that Structure 1 had a set of HLE vessels always present and
available for laborers to use as needed.
Other evidence of the laborers on the Charles Towne common can be seen in the tobacco pipe fragments (n=759) that comprise 23% of all artifacts of Structure 1. The fact that almost a quarter of all Structure 1 artifacts are pipe fragments speaks to the nature of the work in the common, especially when contextualized within the experimental paradigm of improvement pushed by the Lords Proprietors. There may have been a lot of idle time in the farm laborers’ day as they waited for experimental varieties of many plant types to sprout from seed and take root—if it rained they may have needed to protect the weak seedlings; if the young leaves showed weakness in the sun the laborers gave them shade. The future of the colony rode on every plant in the first few years, so labor spent nurturing future crops was worth the time. Those who used Structure 1 as a central work hub may have passed that time smoking tobacco and working on handicrafts like wood products and pottery.

THE LORD ASHLEY SITE IN CONTEXT

The Lord Ashley site was first found by Stanley South and Michael O. (Mo) Hartley in the early 1980s while conducting a survey to specifically find seventeenth century sites along the Ashley River (Hartley 1984). A property owner in the northwestern corner of St Giles Kussoe showed South and Hartley a set of artifacts that were recovered from a brick cellar that was destroyed by a bulldozer during road construction. The opportunity to survey the same property arose from a grant that supported the expansion of the Ashley River Historic District by the Historic Charleston Foundation in 2010 (Agha and Philips 2010; Felzer et al. 2010). After finding a moderate scatter of seventeenth century artifacts and an intact brick chimney foundation in an old cow pasture, archaeological field schools in 2011 and 2013 defined the outlines of Building 1, a 15-foot square
structure on brick foundations with a massive chimney, and Building 2, most likely a crachet or related earthfast building with a cellar (Agha et al. 2012; Agha 2016) (Figures 7.6 and 7.7).

Newly discovered archival information revealed evidence of a post-1681 Indian trade agreement brokered by Percival (Agha 2018). Based on a large amount of glass trade beads and a pottery type indicative of the post-1681 native traders (Agha 2016, 2018; Marcoux 2015), Buildings 1 and 2 were reinterpreted as components of a post-1681 trading post. There are archaeological features scattered throughout the site that suggest several other buildings, mostly impermanent, were present before 1681. Buildings 1 and 2 conform to a rigid alignment as their foundations trend along the same angle, while the partial outlines of other buildings occur at several different angles. One of those buildings is named Building 3.

Building 3 was first encountered in 2011 in the moderately wooded western edge of the site adjacent to a descent into a wetland and creek bottom (refer to Figure 7.6 for Building 3 location). Two spring heads pair to create a creek that flows northwest to the Ashley River. Architectural features were discovered during a 2014 field school in the Building 3 area. My 2016 field season further identified the architecture and expanded the artifact sample for Building 3 so it could be compared to Buildings 1 and 2. My recent analyses of the Lord Ashley site utilized 10,649 artifacts that were derived from excavations on three defined buildings (n=8,089), extant yard spaces (n=518) and a large ditch or moat-like feature (n=2,044). Previous paleoethnobotanical studies of the Lord Ashley site (Agha et al. 2012; Agha 2016) found evidence of Old World cultivars of both kitchen and economic varieties; these are discussed further in Chapter 8.
After recent excavations and analyses, Building 3 is interpreted as a location where impermanent buildings were erected, used and then replaced possibly three times between c. 1675 and 1682. Based on the botanical evidence, I believe Building 3 serviced the laborers and their work on the nearby experiments and when the settlement function changed to focus on Indian trade, Building 3 was used infrequently until the demise of the settlement between 1682 and 1685.

BUILDING 3

Three field seasons of excavation at Building 3 have produced 3,994 artifacts. In 2014 several features that proved to be postholes of varying depths were identified, and linear features with shallow sporadic post-shaped soil stains were found sometimes in conjunction with the deep posts. In 2016 I conducted additional excavations to specifically identify architectural features that would solidify the shape and orientation of a building. After my fieldwork in 2016, a total of 325 square feet of space has been excavated at Building 3 (Figure 7.9).

Excavations total 12, five-foot square and two, 2.5x5' foot units. The wall trenches and posts of Building 2 and the brick foundations of Building 1 are clear-cut and readily identifiable. The architectural features at Building 3, however, reveal rough outlines of either several buildings of various sizes built successively on top of each other from as early as 1675 to 1684-85. More fieldwork is required to delineate past buildings; regardless, enough clear structural evidence is present to affirm past buildings at the Building 3 locus.

Three five-foot units dug in this area in 2011 produced 382 HLE sherds, which made me speculate if it was a slave cabin for the settlement because Buildings 1 and 2 had been
identified and Building 1 resembled a planter's residence (Agha et al. 2012). Because HLE has been found in high frequencies at sites related to enslaved Africans, Building 3 could have been a slave cabin, especially since there were enslaved Africans purchased for St Giles Kussoe on 4 January 1677/8, and an August 1682 inventory listed 15 adult Africans (Stringer notes 1684/5:25). The African presence at the Lord Ashley site could be interpreted through Building 3 and its artifacts, but was this building truly a dwelling or habitation for enslaved Africans in the late 1670s? No 1670s-era slave cabins had ever been found in South Carolina before—I, nor anyone else, knew what such a building would look like archaeologically.

As explained in Chapter 6, there were many possible locations for husbandry, improvement and experimentation on both uplands and wastes, which meant there were probably dozens of small satellite "research stations or laboratories" (Ramisch 2011:280) that were mostly impermanent and scattered throughout the 4,880 upland acres in the estate. Each satellite station would have represented the labor needs for the locale: one station may have had a large barn to store hay alongside support structures for milking cows and dairying, while another station may have just had one or two small impermanent farm buildings that supported an experimental garden—like the Lord Ashley site prior to 1680. Peter Wood (1974:31) summarized what some of the field stations at St Giles Kussoe may have been like: the "slave would build a small 'cowpen’ in some remote region, attend the calves, and guard the grazing stock at night.” A remote cowpen within St Giles Kussoe may have only been used a few months a year, and maybe for only a few years. A building that archaeologically appears as a habitation may have only been a day-use building that was never supported overnight accommodation.
Since St Giles Kussoe was an experimental estate, it cannot be assumed that a building with daily-use artifacts should be interpreted as a full-time 'habitation' that housed people 365 days a year.

To date, 3,018 HLE sherds have been recovered from Building 3, which is 75.6% of all 3,994 artifacts in the Building 3 assemblage. HLE is 60.1% of all artifacts from Structure 1 at Charles Towne. If HLE signals slave cabins, then both of these buildings could have housed enslaved Africans. However, Structure 1 was in the commons and although enslaved Africans probably utilized the building, it was not a 'house' on a piece of property closely managed by an owner. While the socio-political settings of both the English and Carolina commons were different, the work within those commons and the understanding of how the commons were used were likely the same. The large amount of HLE at Structure 1 may have been crafted by African hands but utilized by both themselves and white indentured servants. My contextualization of these 1670s-era buildings within the social relations of private property and its opposite, the commons, forces artifacts like HLE/Colonoware into new realms of interpretation. HLE may have simply been 'colonial pottery' for all laborers that worked on colonial properties in the seventeenth century, and as white servants became fewer, the only laborers left who made and used 'colonial pottery' were the enslaved.

BUILDINGS 1 AND 2 DEFINED

Building 1 was a 15' foot-square wooden structure on brick piers with a large brick chimney that may have supported a loft or partial second floor, while Building 2 was a post-in-ground cratchet-style building with shallow wall trenches that exhibit swirled and "scratched" soil markings indicative of puncheon placement (Agha et al. 2012; Agha
Nails comprise 44.3% (n=863) of the 1,948 artifacts recovered from Building 1; of the 2,147 artifacts from Building 2, nails are 29.6% (n=635) (Table 7.3). Glass bottle fragments are almost equal in count and percentages between Building 1 (n=282 or 14.5%) and Building 2 (n=263 or 12.2%). European and English ceramics total 206 (10.6%) of all artifacts at Building 1 but only 46 (2.1%) artifacts from Building 2. HLE counts are also greatly skewed between Building 1 (n=340 or 17.5%) and Building 2 (n=1,017 or 47.5%).

The fancy metal from Building 1 totals 21 objects (1% of 1,948 artifacts) that include 15 brass adornments, four different brass tacks, a solid silver domed button and a silver paste jewel setting. Only two different furniture tacks were recovered from Building 2; an unidentifiable brass strap fragment and a scrap fragment of silver were found at Building 3. In regards to these fancy metal objects, Building 1 most closely resembles the Miller site. Both buildings also sat on brick foundations. There may be a correlation between fine metal adornment and permanent architecture on seventeenth century sites in Carolina.

Furthermore, pipe fragment frequency is highest at Building 3 (n=253 or 6.3%), but the percentage of pipe is the lowest of all three buildings. Building 1 (n=234) pipe fragments comprise 12% of artifacts. The higher pipe fragment count at Building 3 may indicate between six to eight years of continued use of that locale as a support structure for nearby farming activities. The use of tobacco may have been the same as at Structure 1: the farmers smoked as they carefully attended plants. The high amount of nails (n=483 or 12.1%) among all artifacts from Building 3 may simply reflect the years of regular or
seasonal use of this locale, which required the replacement of support buildings related to long-term husbandry experiments.

LORD ASHLEY SITE MNV ANALYSIS COMPARED WITH CHARLES TOWNE

My MNV analysis identified 27 unique European and English ceramics from the Lord Ashley site. These vessels cannot be safely attributed to a particular building but instead should be understood as an expression of the whole settlement. There are nine different vessel forms attributable to 17 vessels in the MNV assemblage; the remaining 10 vessels are unidentifiable tablewares (n=7) and utilitarianwares (n=3). The non-fancy tablewares include a Staffordshire slipware bowl and mug, a Mottledware tankard, two Borderware vessels of indeterminate vessel form with green and yellow lead glaze respectively, and a Scraffito slipware hollowware vessel that may have been used to serve or hold food. Two small jugs, one a dark cobalt blue decorated Rhenish gray bodied saltglazed stoneware, and the other, a Fulham brown saltglazed stoneware, were decorative enough to probably store and serve beverages while people ate. Hollowware vessels that most likely prepared and served food include two lead glazed redware pots or pipkins and a lead glazed redware vessel with a friable paste. Lastly, a brown saltglazed stoneware jug, an unidentifiable vessel of brown salt glazed stoneware and an unglazed thick-bodied redware hollowware comprise the three utilitarian vessels.

There are also five different creampans identified in my MNV; four are lead glazed redwares and one is of North Devon gravel tempered ware. Two of the redware pans have pouring spouts. The five creampans at the Lord Ashley site help contextualize the laborers with the massive cattle herd on the plantation through dairying activities. These artifacts are further contextualized in the following chapter.
The fancy tablewares (n=7) include one Delft cup, three unidentifiable Delft vessels, two blue decorated Chinese export porcelain saucers (one may be a teacup), and one possible overglaze decorated Chinese export porcelain. The glass MNV analysis identified seven common vessels, four wine bottles and three medicine bottles, and four fancy vessels that include one goblet, two leaded cups and one white Venetian-style glass cup or goblet. The fine glass vessels paired with the seven Delft and porcelain tablewares may likely reflect Andrew Percival's presence, especially after 1681 when he was responsible for settling a trade with new native partners. The luxury ceramics, glasswares, brass and silver together demonstrate evidence of Percival's successful improvement of St Giles Kussoe into an experimental and productive colonial estate.

FINAL SITE COMPARISONS AND CONCLUSIONS

The analyses discussed in this chapter demonstrate the juxtaposition between Structure 1 and the Miller site as the materiality of private property and the commons in a newly formed colonial setting. The Charles Towne sites differ quite drastically from each other. They have radically different architectural footprints and related artifact counts, which are utilized to identify Miller site as a component of developed private property and Structure 1 as a farm-related building indicative of a seventeenth century English commons. The greatly disproportionate percentages of HLE at each site (60.1% at Structure 1 and 5.4% at Miller) help to characterize the social differences between private property and the commons populated by laboring servants and enslaved Africans. The radical differences between the counts and percentages of several artifact categories reflect the radical socio-spatial differences instigated by private and communal property
forms. My theory-driven analyses of these sites and artifacts provides archaeologists with a new context to employ as they excavate the sites of seventeenth century Carolina.

The luxurious ceramics, glass and metal identified at each site, however, does not necessarily assist in the creation of an artifact signature representative of private property and the commons. Although artifact counts between the Miller site (n=9,262) and Structure 1 (n=3,292) are unbalanced, refined metals comprise 0.1% of all artifacts at each site. However, I identified 18 Delft and Porcelain vessels at the Miller site and only four Delft vessels, plus a Delft candlestick holder, at Structure 1. More so, Structure 1 only had one goblet and two wine bottles while Miller site had three goblets and 46 wine bottles. The Miller site and Structure 1 should be compared to other seventeenth century sites in the Charleston area to learn if distinctions of private property and the commons are identifiable at those sites, and if so, can those distinctions lead to new interpretations of the function of past buildings and the social relations between servants, slaves and superiors on various settlements in early Carolina. Also, further comparative studies of other early sites with those in this dissertation may help archaeologists devise new interpretations of the farming and labor activities of servants and enslaved Africans.

Due to specific artifacts at the Lord Ashley site, such as distinct Native American pottery that traveled 100 miles with traders from the Savannah River near Augusta, Georgia and numerous colored glass beads purposed for Indian trade (Agha 2018), it is difficult to label the three buildings at the site as a traditional plantation arrangement similar to "planter house, support buildings, slave cabins." Besides support for post-1681 Indian trade, Buildings 1 and 2 may have been used for farm management and related activities. While Percival was the manager in charge of Shaftesbury's plans, he was not
the owner or the real "planter" of the plantation. St Giles Kussoe may have been in an experimental phase its entire 10 years of existence; if so, it could not have been an expression of a 'plantation system' like what existed during the eighteenth and nineteenth centuries. My work on the three earliest English colonial sites in Carolina demonstrates that what we commonly see in the eighteenth century should not be expected or transposed onto the seventeenth century.

My research into property differences and related architectural forms provides new evidence of the plan to transfer English farming and husbandry to the colony, not necessarily just Caribbean/Barbadian styles. Scholarship of the last few decades has claimed that the mechanized, regimented and industrially-oriented plantation system in Barbados was the impetus that birthed plantations in Carolina (Greene 1987; Nash 1992; South 2002; Stoner and South 2001; Wood 1974). My analyses and research offers an alternative, albeit an English one, to that theory.

There were commons within St Giles Kussoe for settlers to use (SP 2000:441). I ask: who set up those commons for settler use, who prepared the land if it needed assistance, and who managed those commons and took advantage of them before settlers arrived? The indentured servants that were there from the initial settlement did the work and then a few years later they were joined by enslaved Africans. If Building 3 was used by laborers as they worked the land, then buildings like it were probably positioned throughout St Giles Kussoe to conduct experiments on Shaftesbury's private spaces and manage common swaths of arable and pasture throughout the plantation. Building 3, then, can be the materiality of the commons because of the farm- and land-management
labor conducted by the laborers who centralized their work around that building. I interpret Structure 1's function the same way.

Lastly, the ability to identify seventeenth century buildings as components of private property and the commons may give archaeologists new ways to interpret the formation and organization of Carolina's early plantations, especially during the experimentation period of rice cultivation between the 1690s and 1710s. The commons and wastelands in Carolina dwindled every year after 1670 until they were gone. I argue that the loss of communal land signaled the loss of unique ecologies that farm laborers and cattlemen created between properties. Once all laborers lost the commons, did the old practice of small-farming the commons and wastes transfer to plantations? Did the function of early plantation buildings come from the commons? The property-oriented materiality perspective developed in this dissertation can help answer these important questions.

In the following chapter, I align archaeological and archival evidence together to more fully explore and understand the lives of the indentured servants and enslaved Africans at the Lord Ashley site and Charles Towne. In this chapter I brought macro remains—artifacts and architecture—into focus through my materiality of improvement perspective. In the next chapter, I interpret micro remains—paleoethnobotanical artifacts—alongside archival sources to suggest that Shaftesbury wanted a vineyard established at St Giles Kussoe and that an experimental garden was established in the commons of Charles Towne. I conclude my dissertation through the argument that enslaved Africans may have played a vital role in the execution of Shaftesbury's desires.
Table 7.1. Miller site artifacts by percentage.

<table>
<thead>
<tr>
<th>Artifact Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6.2</td>
</tr>
<tr>
<td>Bottle Glass</td>
<td>55.0</td>
</tr>
<tr>
<td>HLE&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.4</td>
</tr>
<tr>
<td>Tobacco Pipe</td>
<td>7.5</td>
</tr>
<tr>
<td>Nails</td>
<td>9.8</td>
</tr>
<tr>
<td>Window Glass</td>
<td>16.0</td>
</tr>
<tr>
<td>Fancy Metals&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<sup>Note</sup>: n=9,262; all artifacts are fragments except some Fancy Metals artifacts.<br><sup>a</sup>Ceramics are European pottery types.<br><sup>b</sup>HLE is Handmade low-fired earthenware.<br><sup>c</sup>Fancy Metals are brass and silver objects.
Table 7.2. Miller Site and Structure 1 artifacts compared.

<table>
<thead>
<tr>
<th>Artifact Class</th>
<th>Miller Site (n=9,262)</th>
<th>Structure 1 (n=3,292)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics(^a)</td>
<td>6.2</td>
<td>11</td>
</tr>
<tr>
<td>Bottle Glass</td>
<td>55</td>
<td>3.2</td>
</tr>
<tr>
<td>HLE(^b)</td>
<td>5.4</td>
<td>60.1</td>
</tr>
<tr>
<td>Tobacco Pipe</td>
<td>7.5</td>
<td>23</td>
</tr>
<tr>
<td>Nails</td>
<td>9.8</td>
<td>2.6</td>
</tr>
<tr>
<td>Window Glass</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Fancy Metals(^c)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

\(^a\)Ceramics are European pottery types.
\(^b\)HLE is Handmade low-fired earthenware.
\(^c\)Fancy Metals are brass and silver objects.

Note: All artifacts are fragments except some Fancy Metals artifacts.
Table 7.3. Buildings 1, 2 and 3 in comparison at the Lord Ashley site.

<table>
<thead>
<tr>
<th>Artifact Class</th>
<th>Building 1 (n=1,948)</th>
<th>Building 2 (n=2,147)</th>
<th>Building 3 (n=3,994)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics(^a)</td>
<td>10.6</td>
<td>2.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Bottle Glass</td>
<td>14.5</td>
<td>12.2</td>
<td>3.9</td>
</tr>
<tr>
<td>HLE(^b)</td>
<td>17.5</td>
<td>47.4</td>
<td>75.6</td>
</tr>
<tr>
<td>Tobacco Pipe</td>
<td>12.0</td>
<td>8.5</td>
<td>6.3</td>
</tr>
<tr>
<td>Nails</td>
<td>44.3</td>
<td>29.6</td>
<td>12.1</td>
</tr>
<tr>
<td>Window Glass</td>
<td>0.1</td>
<td>0</td>
<td>&gt;0.1</td>
</tr>
<tr>
<td>Fancy Metals(^c)</td>
<td>1.0</td>
<td>0.1</td>
<td>&gt;0.1</td>
</tr>
</tbody>
</table>

*Note: All artifacts are fragments except some Fancy Metals artifacts.
\(^a\)Ceramics are European pottery types.
\(^b\)HLE is Handmade low-fired earthenware.
\(^c\)Fancy Metals are brass and silver objects.
Figure 7.1. A facsimile of the original 1671 Culpepper plat of Charles Towne (drawn from original, MPII 13).
Figure 7.2. A facsimile of 1640s Sudbury, Massachusetts; areas labeled "General Field", "North Field", "Great River Meadow" and "Cow Common" were the town commons (drawn from Labaree 1979).
Figure 7.3. A plan view drawing of the architectural features associated with the building at the Miller Site.
Figure 7.4. A plan view of the block excavation revealing Structure 1 with analytical units and features in gray.
Figure 7.5. A map showing the HLE crossmends between features and units at Structure 1; HLE sherd counts by unit are listed (squares at the ends of colored lines denote a cross mend to a unit).
Figure 7.6. A plan view drawing of all excavations and landscape at the Lord Ashley site
Figure 7.7. A plan view drawing of Building 1 at the Lord Ashley site.
Figure 7.8. A plan view drawing of Building 2 at the Lord Ashley site.
Figure 7.9. A plan view drawing of all excavations at Building 3; structural posts are gray.
CHAPTER 8

PLANTATIONS, PROPRIETARY PLANS, PLANTS AND PRODUCTS

Through this dissertation, I have crafted a context for identifying and interpreting the influence, presence and power of the paradigm of improvement, and how that paradigm privileged and empowered some individuals to use it to implement later seventeenth century English modernity through property forms and labor regimes in a colonial setting. My previous chapters have built upon themselves as I wove together a context statement that outlines different ways to recognize materialities of improvement based on various source materials. This dissertation project and its context culminate through this chapter, where I connect multiple forms of data together to demonstrate how laborers at St Giles Kussoe and Charles Towne were colonial laboratory technicians.

The previous three chapters have examined how the materiality of improvement can be identified. Chapter 6 detailed how improvement can be recognized at the landscape-level, Chapter 7 at the macro-level through artifacts and architecture, and in this chapter, I show how the materiality of improvement can be identified at the micro-level through paleoethnobotanical plant remains (PBOT) recovered from the excavations at the Lord Ashley site and Charles Towne. I am able to link many of the plant types identified at these sites to many specific archival references that reveal information about the labor of Andrew Percival, indentured servants, and enslaved Africans at St Giles Kussoe. Plant remains also bring a previously unknown visibility to the unknown laborers—the "invisible technicians"—in the Charles Towne commons.
This chapter attempts to answer the third and final question of my dissertation: the reasons why Africans were favored as laborers over white servants. To reiterate, Peter Wood (1974:37) asked “Were Negro slaves simply the cheapest and most numerous individuals available to a young colony in need of labor? Or were there other variables involved in determining the composition of the Carolina work force?” Cost and count were not the variables behind the increase of enslaved Africans in Carolina. Instead, the composition of Carolina's work force was determined by the abilities of Africans to implement experimental agriculture in ways that servants could not. Simply put, Africans were able to implement English improvement through labor on land in ways the English colonial masters believed was better than comparable labor of white servants: Africans were better improvers than whites. Through historical political ecology, Africans were viewed by their white owners as better creators of Second Nature than were servants. Enslaved Africans brought improvement-minded planters like Shaftesbury the vehicle they needed to drive improvement and natural philosophy into the colonies through stronger, more forceful ways than ever before.

But before enslaved Africans attempted to implement philosophically-influenced husbandry upon nature, those people had to be tested in an experimental labor regime that was designed to operate within an experimental form of private property: an estate-turned-laboratory. Research into St Giles Kussoe has found strong links between Shaftesbury's plans for enslaved Africans and one of the most desired yet experimental crops ever attempted in Carolina: grapevines. The context I have developed can be used to read the origin of labor in Carolina in ways that force us to redefine who the laborers were and why there were here.
This chapter describes, discusses and reinterprets the last 14 years of PBOT analyses of the Charles Towne and Lord Ashley sites to see new ways to view the origins of the 1670s Carolina landscape, its laborers, and the experimental plants that gave the colony its original character and guided its first social relations to nature. My research connects the experimental plants to the May 1674 book list, John Locke's travels in France, Shaftesbury's own Wimborne St Giles's house gardens and orchards, the Charles Towne colonial accounts, and the program of the Royal Society. This dissertation, as a context, allows for new interpretations of the indentured servants and enslaved Africans who lived and worked at St Giles Kussoe and the private and public places of Charles Towne.

PALEOETHNOBOTANY AT CHARLES TOWNE AND ST GILES KUSSOE

PBOT analyses of the Lord Ashley site (Johanson and Hollenbach 2014; Jones 2013; Jones and Larmon 2012) and the Crop Garden site at Charles Towne (Bozarth and Stuart 2007; Cummings 2006; Cummings et al. 2007, 2008) have yielded evidence of the past local environments and Old World economic plant varieties that were grown at these sites during the 1670s and early 1680s. In 2016, I collected soil samples from locations near the Miller site and Structure 1 to better understand both as private property and the commons (Jones 2019). The PBOT remains from Structure 1 that were collected and stabilized in 2000 were also finally analyzed (McKnight 2018). The PBOT analyses support my argument that the area west and south of the palisade wall at Charles Towne was the town commons. The Crop Garden, then, sat in the common.

Scientifically-oriented plants are the materiality of improvement; hence, they are indicative of private property. When these kinds of plants are found inside of private property, they can be connected to the property owner who improved property through
those plants. However, the Crop Garden contained those kinds of plants and was in the town common. Due to its position in the landscape, the plants can be connected to the enslaved African and indentured servant laborers who worked the commons at Charles Towne. They were the ones who worked in the garden; they were performers of improvement on land. While plants representative of improvement can signal private property, the plants can also help identify the labor conditions instigated by the plants—the more sensitive the plant, the more tedious the care; the more exotic and particular the plant, the more intent and worry was placed upon it. The subaltern of the past can be better understood if we ‘study-up’ and look at Carolina through the eyes of the people who built the mechanisms that subjected the subaltern to specific kinds of tasks and experiences, such as scientifically-oriented labor on experimental plants.

MILLER SITE AND STRUCTURE 1 PHYTOLITH ANALYSES

Phytolith samples were collected from specific locations in relation to the property line between the Miller site and Structure 1 (Figure 8.1). Phytolith Specimen 1 was collected ~150' west of the Miller site and ~200' east of the property line, inside the small private lot. Analysis found that the local environment near the sample site was grassy and partly wet long enough to encourage the growth of water-loving plants like sedge and cordgrass or saltgrass (Jones 2019:5). No evidence of agriculture or maize was found.

Specimen 2 was collected 70' west of Structure 1 and contained phytolith evidence for maize. This sample reveals that abundant grasses grew around Structure 1, which suggests the area was mostly open (Jones 2019:8), much like arable or pasture. Likewise, the macrobotanical analysis of 15 flotation samples from 12 features at Structure 1 identified maize and beans that most likely relate to the Native American occupation of
this landform during the early and middle Mississippian periods of Southeastern
prehistory, as evidenced by South's (2002) work at the "Moundless" Ceremonial Center
nearby. PBOT analyst Justine McKnight (2018:11) states that the lack of cultivated plant
remains are "conspicuously absent" from the macrobotanical artifacts recovered from the
features around Structure 1 (Figure 8.2). Besides corn, the other notable food sources are
nut varieties hickory and black walnut.

The features that contained artifacts and defined and surrounded Structure 1 date
exclusively to the 1670s. The large amount of pottery recovered from the spaces within
and adjacent to Structure 1 indicates that the people who utilized the building regularly
ate and drank. However, both plant and animal remains are minimal in the artifact
assemblage. The specific foods that the indentured servants and enslaved Africans ate
while at Structure 1 may have left a minimal material trace, or their food waste was
deposited in a specific location due to the management and use of the common.

EXPERIMENTATION IN THE COMMONS-THE CROP GARDEN SITE

Archaeologist Elsie Eubanks conducted a shovel test survey on most of the high
ground within the commons at Charles Towne. In 2005, her unit excavations revealed a
linear feature that resembled what Stanley South (2002:77) called "vineyard ditches"
based on the numerous examples he found in 1969. South (2002:76) described finding
"ditches in the high ground as well as in the swampy marsh", which, in his mind "tended
to rule out any agricultural practice since it was difficult to imagine what crop could
survive both extreme conditions." However, to the Lords Proprietors, nothing was too
"difficult to imagine," and what South reported finding sounds exactly like the "extreme"
experimental agriculture the colonists were ordered to try.
At the Lords Proprietors plantation, Joseph West was to make sure that when he selected land for plating locations he "let there be some marsh, and not much, ye rest to be of as many varietys of soyle" as possible (SP 2000:126). West was also to plant seeds "in Sandy land, some in light black mould [that] lyes high, & some in land that lyes low...you are to doe ye same as to ye soyle with your vine & Ollive Plants" (SP 2000:126). The "vineyard ditches" Stanley South discovered "in the high ground as well as in the swampy marsh" are a match between the soil and archival records. The ditch Eubanks found, however, produced no grape pollen.

Later, Eubanks excavated a block of 37 units that exposed several rows of small planting holes and shallow trenches related to agriculture. Five features were sampled for four different pollen and phytolith analyses (Cummings 2006; Cummings et al. 2007, 2008; Stuart and Bozarth 2007). Recent investigations by Isenbarger (personal communication 2020) have found a northern limit to the Crop Garden and further evidence that features in the area date to only the 1670s. All of the pollen and phytolith reports prepared are unique and all of the findings have not been synthesized under one interpretation until the incorporation of the Crop Garden into my research and analyses.

PLANTS AS THE MATERIALITY OF PROPRIETARY PLANS

Archaeobotanical analyses were conducted on 10 different features and one discreet soil horizon in the Crop Garden (Figure 8.3). Sugarcane, barley and maize were identified through both pollen and phytolith analyses (Bozarth and Stuart 2007; Cummings et al. 2007, 2008). Pollen from grapes, cotton, tobacco and possibly wild or cultivated oats were also identified (Cummings et al. 2007, 2008). Pollen of the parsley and mint families were identified. The parsley family includes dill, fennel, anise, caraway and
carrots, while the mint family includes basil, oregano, rosemary, sage, thyme and different mint types. Plants such as those from the parsley and mint families are vital to my interpretations of the distinctions between the people with private property and those who labored in the commons.

For their private plantation, Shaftesbury, Colleton and Carteret (SP 2000:125-126) instructed Joseph West to grow the experimental crops cotton, indigo, sugarcane, olive trees and grapevines, and "Indian Corne, Beanes, Pease, Turnipps, Carretts & Potatoes for Provisions." Of these plants, sugarcane, grape, corn and possibly potatoes and carrots were identified through archaeobotanical analyses of the Crop Garden. Besides these, tobacco and possibly wild or cultivated oats were identified through pollen (Cummings et al. 2008). Because some of these plants—sugarcane, grain, cotton, grapes and potatoes—can easily fit within the materiality of improvement, their presence in the town commons is confusing and problematic. Was the Crop Garden managed by someone who had private property and a right to specific acreage in the common to use as they pleased—someone who had the privilege of experimentation? Was the garden managed by people skilled in experimental husbandry and/or worked and cared for by servants and/or slaves? Or, was this garden run by only subaltern laborers who were the controllers of their own experiments? All are possibilities.

The colonial Carolina correspondence captured communication between privileged people. The only people who held audience with the Proprietors were members of Carolina's Parliament and Grand Council, the colony governor, ship captains, surveyors, and the agents, deputies and landgraves appointed by the Proprietors. Craftsmen, artisans, apprentices, farmers, planters of small tracts, servants, and especially slaves wrote few to
no letters to their colonial leaders in England. Therefore, we do not know if the laboring
class was allowed to have the seeds and cuttings of cotton, rice, sugarcane and
grapevines. The Lords had control over specific ecological products, which means they
had control over the ecology—a political ecology—they gave birth to in Carolina.
However, the Lords may have wanted to succeed so badly that they allowed, even
through close supervision, the farmers and graziers of the commons to install
experimental plantings in every conceivable location, common or not.

The Crop Garden, then, helps to support our understanding of the kinds of labor
performed by those who worked in the commons. If the Crop Garden was a communal
effort, as work in the commons traditionally always was in England (Allen 1992), then
what kind of laborer worked on what kinds of plants; who was and was not allowed to
work specific plants; how did a garden like this one in the commons dominate the time
spent in the commons; who did and did not have access to the garden; and, how coercive
was the labor on the plants in the Crop Garden? Here, investigation into the materiality of
the paradigm of improvement reorients our understanding of indentured servants and
enslaved Africans as colonial laborers on farms, where a focus on their labor and work
takes precedence before attempts are made to understand their identities. People were
connected to the land in various ways for various reasons and the 'great leveler' over
those connections was their social relation to property. The Crop Garden in the common
at Charles Towne provides a unique way to explore the origins of Carolina's agriculture
and labor simultaneously.
CROP GARDEN PLANTS RECONTEXTUALIZED

Some of the identified plants from the Crop Garden required specific sets of methods, procedures and instructions for their transfer from Barbados to Carolina. West was told (SP 2000:125) to transport young sugarcane and grapevine cuttings "in a tubb of earth, that they may not dye before" he reached Charles Towne in 1670. Many people labored to make this transplantation method work, and we know it did work because sugarcane was found in the Crop Garden. The Crop Garden provides evidence of not only sugarcane and the labor of its care, but the labor that was directive: planning the method, building wooden containers and filling them with dirt, preparing the live cane cuttings for overseas travel, caring for the cuttings on the ship, and unloading the tubs and rowing them to shore. Sugarcane involved diverse tasks that involved many kinds of people.

Throughout most of the excavation block there are large rectangular and square-shaped features that have the same east/west orientation as the trenches. Three of the four sampled contain the densest concentrations of sugarcane phytolith of all 11 sampled soils in the Crop Garden; the fourth had elevated counts as well (Cummings et al. 2008). These features and their strong association with sugarcane are reminiscent of a cane planting method practiced by Henry Drax in Barbados. In 1682 he directed his plantation manager to transition from digging rows for cane sets to “regularly spaced square ‘holes’ in which to plant cane seedlings, each a uniform width and depth and each separated from its neighbor” (Thompson 2009:573). Under optimal development, the space between a group of four holes “known as saddles and squares” were planted with food crops and harvesting was carefully coordinated with cane cutting (Thompson 2009:573-574). While the archaeological sampling strategy was not designed to test for Drax's Barbadian sugar
scheme, the plants identified exhibit possible evidence of intercropped sugarcane and other cultigens. These square and rectangular holes could be evidence of Barbadian sugar technology transfer on the smallest scale yet discovered.

The identification of tobacco provides evidence, although scant, of the crop at the town. This is important because two entries in the Shaftesbury Account book (1682:37, 38), a £50 customs payment and a £46:13:0 bill for “freight of ye Lords Proprietors Tobacco from Carolina”, provide evidence that tobacco was grown, made merchantable, and most likely shipped from Charles Towne. Evidence of tobacco pollen creates a link between the Crop Garden and potential shipments of tobacco from the town dock that was only 700 feet away.

At the crop garden, evidence of barley was discovered through phytolith analyses (Bozarth and Stuart 2007). Bozarth created a comparative sample from barley and wheat that he toasted and malted in order to identify evidence of brewing beer or ale. He found a match between one of the small planting holes in the Crop Garden and his malted barley phytoliths. *Cerealacae* pollen, representative of Old World grains, was also identified at the crop garden, which further supports the connection between actually productive barley growth and the conversion of it into beer or ale. The identification of barley through phytoliths, and contextually through the *Cerealacae* pollen, is possibly some of the oldest tangible evidence for English grain grown in Carolina. Evidence of barley at Charles Towne can also be backed up by colonial accounts.

In a report after the first winter in Carolina, Joseph West (SP 2000:269) said he "sowed some English wheat in November and it doth thrive very well." Likewise, in a firsthand report of Carolina, Crafford (1683:5) remarked that colonists sowed "English
Graine such as pease Oats Barley” and harvested in May. The 1682 Carolina account written by Thomas Ashe (Salley 1911) is important because he personally talked to planters about their experiences. Ashe (Salley 1911:146) wrote that the “wheat they have planted has been rather for Experiment and Observation” rather than subsistence or export, but the planters Ashe talked to told him grain “grew exceeding well.” Ashe (Salley 1911:146-147) also said that while in Carolina he met an “ingenious Planter” that had “very good [barley] growing in his Plantation, of which he intended to make Malt for brewing of English Beer and Ale.” Lastly, Samuel Wilson (Salley 1911:170-171), secretary to the Lords Proprietors after Locke left for France late in 1675, also wrote a 1682 Carolina account and noted that “Wheat, Rye, Barly, Oates, and Peas, thrive exceedingly.” Even if barley was grown at Charles Towne to be purely 'experimental,' it may have produced enough grain to brew beer with for a small number of people—to only a few people, a small plot of barley might have been more than enough.

One of the most interesting identifications is of rice tribe Oryzeae-type pollen and phytoliths (Cummings et al. 2007, 2008). The PBOT analysts and archaeologist Eubanks interpreted the shallow linear swaths of disturbed soil in the Garden as irrigation ditches that assisted planting holes, or supported the growth of wild or white rice (refer to Figure 8.3). Instead, the excavated trenches resemble archaeologically identified historic garden beds (Agha 2018b; Zierden 2001, 2003). Plus, the sampled trench contained phytolith and pollen evidence for sugarcane as well as wild or cultivated oats. While the phytoliths also demonstrate a wet soil that favored water-loving plants, the trenches are between 5’ and 6’ apart; Henry Drax told his manager to plant rows of sugarcane 5.5’ apart (Thompson 2009:574), so these trenches may represent several kinds of crops. Based on
my interpretations of these features, the trenches were not capable of holding the several inches of water required to support wild rice (Zizania spp.) or white rice, which was a theory purported by the pollen analysts (Cumming et al. 2007, 2008). Carolinians did not discover the secrets of wet-rice agriculture until after 1690 (Agha et al. 2010; Carney 2001; Littlefield 1981).

The farthest average distance white rice pollen travels is 820' to 985' (Kanya et al. 2009). This distance restricts interpretation of where rice was tested to only within the town space of Charles Towne. Because the rice pollen and phytoliths are paired, it can be suggested that these artifacts represent attempts to plant rice on dry ground in the 1670s. A shipment of supplies that arrived at Charles Towne on 23 April 1672 included one barrel of rice (SP 2000:389-390). It is unknown if it was for food or for seed. The rice was also shipped with 31.5 barrels of flour and 42 puncheons, or 3,528 gallons, of peas. If the rice were food then there should have been much more of it shipped with the flour and peas. Due to its rarity early in the colony's history, the archaeobotanical evidence can be connected to the barrel of rice to suggest that the Crop Garden may have been a location for some of the very first dry-ground rice trials in Carolina.

Furthermore, English floating meadow technology transfer should be investigated alongside the advent of rice experimentation when wastelands and commons were improved through property relations. If enslaved Africans were true "experimenters" (Eltis et al. 2007:1332)—true technicians—then it is important to learn if those laborers married exploratory rice trials to both dry and wet environments such as the swamps and savannas in wastelands. If wasteland was improved through floating meadow technology, rice could have been tried in those environs as well. It is possible that the English
expertise of growing grass was paired with the West African expertise of growing rice—itself a type of grass. More fieldwork is required to test this theory further.

Lastly, grape pollen was identified at the Crop Garden. Grape pollen, like tobacco and cotton, is strictly insect-pollinated and the pollen does not travel by wind; archaeological grape pollen indicates the plant location. Besides their possible sugarcane planting connection, the shallow trenches described above may have been related to vineyard planting and preparation. The soil between arbors and vines was broken and agitated to instigate root growth. Spanish spy Camunas reported grape arbors at every house he saw as he traversed Charles Towne in 1672 (South 2002:30). The two sets of linear trenches in the Crop Garden were potentially oriented for vines to get adequate sunlight. In a few places there are possible trellis posthole features that trend with the trenches—seventeenth century grapevines may have grown in this location.

Artifacts at Structure 1 indicate use by laborers; however, the plant remains do not reveal what their agricultural labor was in the common. The lack of crop remains could reveal a cow pasture, and Structure 1 serviced cattle workers. The Crop Garden was clearly an experimental plot that could have been worked by both indentured servants and enslaved Africans. Further analyses of the artifacts found in context with the Garden and surrounding area may indicate past peoples' activities in that space. Comparisons of cottage excavations in the English commons to Structure 1 could also shed light on 1670s Carolina in ways we have never known before.

THE PLANTS AND PEOPLE AT THE LORD ASHLEY SITE

Evidence of local trees, plants, and Old World crops mentioned in the colonial documents were identified through pollen, phytolith and charred macrobotanical analyses
from the Lord Ashley site. Many of the identified plants can be directly and contextually linked to both the indentured servants and enslaved Africans who worked and lived within St Giles Kussoe. Eleven soil samples were collected from features and unit profiles for pollen analyses in 2011 and 2013 (Jones 2013; Jones and Larmon 2012), eight soil samples were processed for macrobotanical analyses in 2013 (Johanson and Hollenbach 2014) and 2017 (McKnight 2018), and four soil samples were processed for phytolith analysis in 2016 (Jones 2019). These studies combine to create a diverse ecological profile of the Lord Ashley site and nearby environs, which allows me to interpret the site as a satellite research station within the broader experimental agricultural landscape of St Giles Kussoe.

PERCIVAL, MANAGER OF LAND AND PRODUCTION

At St Giles Kussoe Andrew Percival was the 'bailiff' who managed the laborers, husbandry and cattle on over 13,000 acres of land. He was also governor of the plantation, which meant he was expected to enact and enforce the *Fundamental Constitutions*, and, if settler families came to St Giles Kussoe with Shaftesbury's support, be constable over neighborhoods settled in the estate. It is unknown if any such settler families lived within St Giles Kussoe. However, Percival had to be prepared for anyone's arrival. And preparation was labor—it was directive (Russell 2004). He was heavily involved in the consistent upkeep of the entire landscape as he directed the laborers to alter First Nature into an enclosure under Shaftesbury's design, and then further alter the interior into the Second Nature of a socially engineered experimental agro-laboratory.

Percival was also an instrument used by Shaftesbury to gather observations for both he and Locke's assessment. Shaftesbury may have wondered if white indentured servants
thrived in his plantation, or theoretically, in the ecology he was coercing them to create. He may have also been eager to learn if Africans, through experimental improved husbandry, were able to change nature into the property forms that would justify his claim to over 12,000 acres of Carolina, especially when that claim was based on Locke's theory. The sale and shipment of products from St Giles Kussoe was confirmation that labor transformed—improved—the land into property more valuable than it was prior to enclosure and labor. As Percival managed plantation laborers and traveled around the Atlantic, he may have acted like an agent of Salomon's House who gathered useful information for the estate he managed.

Percival could have also kept record of the differences between servants and slaves and how they used tools, manipulated plants, and cared for animals: was one group better at some things than the other? These observations would have been vital to the way Shaftesbury planned the future of slavery in Carolina: he was the leading figure over the colony and had the governmental and financial power and backing to alter colonial rule if he decided to. If Shaftesbury thought African slavery was beneficial, even vital, to the success of not only Carolina but all colonies, and he had ideas for how to improve upon slavery and especially the kinds of labor that enslaved Africans performed, then people listened and they listened intently to what he had to say about it.

Percival executed Shaftesbury's plantation plans and was also the manager of Shaftesbury's ships and their captains who imported and exported throughout the Atlantic. He managed ship cargo at Charles Towne (Bates and Leland 2006:36) and sailed between England, Bermuda, Barbados, Carolina, Maryland, and New York for commerce. Percival also oversaw all colonial property transactions from December 1675
to October 1682 as Register of the Province (Bates and Leland 2006). Although busy with other jobs, his primary focus and personal labor was spent on the plantation.

Pollen analyses identified 18 different tree types at the Lord Ashley site and surrounding environment. Maurice Mathews (SP 2000:333) listed 17 tree types on the Ashley River, many of which he probably saw while surveying the 12,000-acre parcel that became St Giles Kussoe (Table 8.1). The identification of tree types is important to my interpretations because tree and wood research was a large part of Percival's plantation labor. Although pollen analyses did not identify cedar, it was the only identified wood type shipped to England (Percival Account 1680; Shaftesbury Account 1682). Shaftesbury inquired about cedar for good reason: Royal Society Fellows were highly interested in and experimented with cedar trees in England in the 1660s and 1670s (Jarvis 1976). Percival entered 17 different charges related to cedar and its transport in his account book between March 1675 and March 1679/80. Servants were the only laborers at St Giles Kussoe between 1675 and 1678, so the cedar shipments reflect both servant work and Percival's management.

Shaftesbury may have been focused on the improvement of trees, plants, animals and labor on land, but his will to experiment was not restrained to high ground. One industry unrelated to his terrestrial laboratory was whale fishing. Whaling had already been highly successful off the North Carolina coast in the 1660s (Reeves and Mitchell 1988), which meant the Lords Proprietors were well aware of the prospect for whaling out of Charles Towne—the *Fundamental Constitutions* made all whales the property of the Proprietors (SP 2000:116). In 1670 there was a sighting of several "small kinde of whale white about ye head" that may have been Sperm whales, and if so it would be "worth ye Experiment
to finde out ye truth of it" (SP 2000:167). Not losing an opportunity, in 1672 Shaftesbury invested in the Whalebone Company that managed the whale trade and industry based in Greenland (Haley 1968:228). The trade was in decline for roughly 20 years prior and investors, including Shaftesbury, anticipated the passage of a new Act that would open up the trade again after 1673 (Scott 1910:73-75).

Shaftesbury's investment and interest in whaling are clearly related to his Carolina portfolio. The Shaftesbury Account book (1682:34) listed a £201:10:11 payment on 28 May 1680 “for Goods for my Plantation att St. Giles whale fishing and building the flyboat.” An economic description of Greenland in The Politician’s Dictionary (Allen 1775:303) stated that “the vessels most proper for the whale-fishing, are those we call fly-boats, cats, or hag-boats”. Shaftesbury also had three informative accounts of whale fishing and its colonial potential in the Philosophical Transactions (1665.0009, 1665.0059, 1666.0056).

Based on the final letter Shaftesbury wrote to Percival in June 1682, it appears that the investment in whale fishing off the Carolina coast was worthwhile. Shaftesbury (PRO 30/24/7/505) thanked Percival “for the good way you have putt the Whale fishing trade” and added: “As for ye Whale fishing I am willing you should come in 1/3rd.” British customs ledgers reveal that baleen and whale oil were consistently shipped out of Carolina between 1696 and 1721 (Reeves and Mitchell 1988:4). While Reeves and Mitchell (1988) do not connect seventeenth century Charles Towne to Carolina's whaling industry, it is possible that Shaftesbury's whaling research and investments—the equipment, flyboat and time spent by Percival—were a contributory component of Carolina's overall whaling industry.
Lastly, Percival sold 50 heifers "off St Giles Plantation" to John Smith in 1680 for £200 (Percival Account 1680:14; SP 2000:470). Smith was Shaftesbury's "particular friend" (SP 2000:470) who in 1676 settled 1,800 acres on the other side of the Ashley River opposite St Giles Kussoe (Bates and Leland 2006:31). Two years after the sale there were 594 cattle on the plantation. The cattle sale was a demonstration of Percival's competent management of the laborers in charge of the cattle: a sale of 50 heifers did not weaken the herd, but instead strengthened other colonists in the neighborhood, which in turn strengthened the colony. Furthermore, Samuel Wilson's Carolina account from 1682 claimed that “Neat Cattle thrive and increase here exceedingly, there being particular Planters that have already seven or eight hundred head” (Salley 1911:170-171). Who were those planters? Wilson, as Proprietary secretary, may have learned of St Giles Kussoe from Percival and/or Shaftesbury directly, and described, albeit inflated, Shaftesbury's plantation. In the end it seemed that Shaftesbury chose well in Andrew Percival as governor of his plantation, and manager of his laborers.

INDENTURED SERVANT EVIDENCE AT ST GILES KUSSOE

A recent groundbreaking archival discovery of a deposition related to two indentured servants at St Giles Kussoe provides evidence of several colonial products that were produced on the plantation. The deposition was part of an inventory of St Giles Kussoe that was a component in the 1684 case Shaftesbury v. Shaftesbury: a court battle between Shaftesbury's son and grandson over the First Earl's inheritance (C 9/96/98). Until now, the years of tenure for the indentured servants at St Giles Kussoe was unknown; this deposition, most likely taken in the summer of 1682 when the cattle and enslaved Africans were inventoried (Stringer Notes 1684/5), is evidence that the indentured
servants and enslaved Africans worked and lived at St Giles Kussoe simultaneously. My transcription of the Indentures Deposition (C 9/96/98) is presented as Appendix A.

The two unnamed servants on the deposition listed four products that they had produced at St Giles Kussoe: bacon, beer, butter and turkeys. Artifacts, architecture and archaeological features can be interpreted to connect the production of bacon and butter, and turkey husbandry, to the Lord Ashley site. However, it is impossible to claim that the two servants mentioned in the Deposition lived at the Lord Ashley site settlement, although it can be suggested those servants worked there. For the sake of clarity, the servant listed first is referred to as Servant A and the other as Servant B.

The first product listed under Servant A's account are "17 flitches of Bacon." A flitch is a large cut of meat from one side of a hog that typically weighs 35 to 50 pounds. Faunal analyses of the Lord Ashley site identified pig and wild boar (Agha et al. 2012), which suggests the bacon was produced on site. In all, Servant A produced between 595 to 850 pounds of bacon.

Servant A also sold "2 hogsheads of strong beare" or beer—the equivalent of 126 gallons. Shaftesbury instructed Percival to grow English wheat. Unfortunately, there is currently no botanical evidence for Old World grain at Lord Ashley site. Because barley was identified in a brewing context at the Crop Garden in Charles Towne, there is a strong possibility that English grains were grown on the Ashley River. Servant A apparently had a grain source large enough to brew a surplus for sale. The grain may have been tested somewhere else in the 5,000 acres of uplands or the commons outside the estate enclosure. Corn and peas were Carolina exports bound for the Caribbean but English grains were not (Weir 1983:142). However, every single plant, tree or vine did
not have to be of merchantable export quality or volume. The local inhabitants needed regular household goods, like grain for bread flour and beer, and small crops of English grains may have sustained households during the first decade of settlement in Carolina. A possible bread oven associated with the large hearth in Building 1 also supports the growth and use of English grain at the plantation.

BUCKWHEAT AND TURKEYS

Although wheat, barley or oat pollen was not found, a different Old World grain was identified: buckwheat. The identification of buckwheat pollen (Jones 2013) is evidence of several connections to the improvement paradigm, the Royal Society, and the indentured Deposition. Evidence of buckwheat in North America is very rare: the Lord Ashley site and a c.1670-1680 era well excavation in Delaware (John Jones personal communication, 2020) provide the two earliest examples of this grain in North America. It is fitting then that Shaftesbury's implementation of a colonial improvement program incorporated buckwheat into Carolina's agricultural origins.

After "strong beare" is a listing of 10 turkeys. When buckwheat was introduced in England it was grown as a cover crop for poultry and sometimes cattle (Thirsk 1984:211, 270). In 1664, buckwheat and other plants like hemp, flax, hops and licorice caught the attention of the Georgical Committee for the Royal Society as they decided what needed agricultural experimentation (Thirsk and Cooper 1972:150-151). In her research into the improvement of turkeys in England during the seventeenth century, Fothergill (2004:216) explains that the success of buckwheat as a fodder that could grow in poor soil sparked a "surge in growth" for both ranging grounds and the poultry industry. Although the scholarship is new and data set limited, statistical studies of turkey faunal material from
archaeological sites in London demonstrate that turkeys were bred for larger size as time passed in the post-medieval period; better food sources for turkeys, then, was critical to breeding efforts (Fothergill 2004:219-221). Large-scale production and directed breeding eventually led to the commoditization of turkeys in England as well as its North American colonies (Fothergill 2004:221).

Turkey was not identified in faunal analyses of the Lord Ashley site, but chickens were (Agha et al. 2012). Poultry evidence raises the possibility that turkeys were at the settlement as well. Turkeys may have also been kept at another settlement in St Giles Kussoe, or turkey bones never had the chance to enter the archaeological record because they were intended for sale, not local consumption. Turkeys were associated with "status, celebration and goodwill" in seventeenth century London (Fothergill 2004:211). Because turkeys were connected to the Christmas table, the desire to obtain a turkey "added to the social pressure to provide 'luxury' items for one's family" (Fothergill 2004:211). That social pressure also instigated people to buy luxury items to surround the turkey and 'decorate' the table with Chinese porcelain, ornamental Delft and other fine silver and glassware. Buckwheat-improved ranging grounds helped turkeys become more valuable and fatten up for large feasts and large ornamented tables.

One fact that allows for a better understanding of the laborers at St Giles Kussoe is that poultry-keeping was almost completely dominated by women during the seventeenth century (Fothergill 2004:217). The woman, then, who kept turkeys "required some specific skills or knowledge to husband successfully, especially when in large groups" because turkeys were known for their "troublesome behavior" which made them "harder to manage than chickens" (Fothergill 2004:216). Poultry and their eggs were mostly
produced on estates; however, they have not been well documented in household accounts because poultry was deemed "less worthy of investment and 'improvement'" (Fothergill 2004:217). Shaftesbury was someone who seemed to have never placed anything outside the range of improvement: at the estate of St Giles Kussoe, the pairing of buckwheat and turkeys was the materiality of servant-run laboratory experiments.

Were Servants A and B women? The number, names and genders of the servants at St Giles are unknown. If turkey husbandry was women's work in England, then it is possible that the turkeys were raised by a wife and her husband procured the bacon and brewed the beer—the family created an economic household. This theory is supported by the fourth and last item listed for Servant A: butter.

Servant A claimed a sale of 419 pounds of butter. Dairying was almost always women's work (Valenze 1991) and when possible, women sold their butter and cheese in local markets (Yentsch 1991). The archaeological evidence of dairying activities are identified through fragments of lead glazed earthenware creampans, which separated curds and whey from fresh milk; curds and whey were then used to make butter and cheese. There are five creampans in the Lord Ashley site MNV. These five vessels could have been in use at anytime between 1675 and 1685. There were also 173 cows on the plantation at the time the servant inventory was taken; the herd would have required constant milking from numerous laborers.

THE VALUE OF SERVANT LABOR

On the Deposition, Servant A was credited with considerably more produce than Servant B. Servant A's produce was valued at £29:4:4½ while Servant B's smaller amount of goods—one flitch of bacon, 36 pounds of butter and two turkeys—was
collectively worth £1:11:6. The values of bacon, beer, butter and turkeys are unknown in Carolina during the seventeenth century, so these evaluations of servant produce may currently be the only evidence detailing the value of colonial servant-produced goods. When contextualized against the average value of an indentured servant contract for labor in Carolina, the money owed to Servant A instigates interesting interpretations.

An indenture agreement between a servant and Joseph West at the Lords Proprietors Plantation in December 1673 stated that the servant was to receive £5 payment for one year and one month of service with the chance to renew the contract under the same terms (Smith 1961:Plate 2). A 1681 inventory collectively valued a man and a woman at £19 and two young men at £25; a 1682 inventory valued a sick servant maid at £6:6:0 (Smith 1961:135). The average length of a servant contract in Carolina was 3.5 years (Hiatt 2002:1). Therefore, given these figures, the average indentured servant in Carolina between the mid-1670s to early 1680s may have been paid roughly £15. The £29:4:4\(\frac{1}{2}\)
owed to Servant A was worth almost twice that of their contract upon completion at St Giles Kussoe, considering Servant A had a three-year contract worth £5 a year.

Shaftesbury, then, allowed his servants to partake in cottage industries among the families at the plantation and sell their goods at a market on the plantation, or they went to market at Charles Towne and/or other neighborhoods to sell their goods for credit in England. Shaftesbury may have also allowed his servants to profit from plantation surpluses. Any additional money that could be earned by a servant while indentured in Carolina could have been used to improve and develop the acreage guaranteed to that servant at the end of their contract. Evidence of butter and turkeys provides
archaeologists and historians with a way to understand the early economies of indentured men and women.

While it can never be proven, it can be suggested that some of the servants' products came from the Lord Ashley site, possibly the turkeys, bacon and especially the butter. If plantation operations were indeed disrupted during the Westo War between late 1679 and early 1681 (Agha 2018), then the new settlement at the site after the war ended could have been one of the few remaining active locations of servant and enslaved African labor. The production of 455 lbs. of butter may have occurred at the site given that Building 2 was built over a cellar that may have been used for cold storage. In 2007, I excavated a cellar at the c. 1710-1767 Haskins Plantation site (James and Philips 2019), located 4.5 miles from the Lord Ashley site (Figure 8.4). The Haskins cellar resembles the potential cellar under Building 2 at the Lord Ashley site due to similarities in construction (Figure 8.5).

First, a controlled excavation to make a square pit removed topsoil and humus—the brown soil under the rootmat—until clay subsoil was reached (Figure 8.5, left drawing). The excavators removed all humus above the clay subsoil to expose a clay surface. Then, they dug into the center of the clay and made a deeper square depression with a flat floor (Figure 8.5, center drawing). The heavy clay fill was then piled and packed against the edge of exposed humus to create a clay 'wall' for the cellar; sand was probably laid on top of the clay as a dry stable floor (Figure 8.5, right drawing). Clay would have served a few beneficial purposes: it acted as insulation and helped keep groundwater out of the hold. Figure 8.6 displays photos of the cellar surface at Building 2 at the Lord Ashley site. In the photos from left to right, the dark soil represents the in-filled interior of the cellar, the
linear orange mottled clay feature was the north wall of the cellar hold (similar to the wedge of clay seen in the bottom image of Figure 8.4), the yellow sand is natural subsoil and the brown linear sand feature represents the north wall of Building 2. Only two small test windows have been excavated into the cellar fill. Building 2 requires full excavation to understand if it served a role in dairy production between c.1681-1685, which, if paired with the evidence of turkeys, can reveal never-before known information about indentured servants and women's work during the first years of Carolina's settlement.

POTENTIAL KITCHEN GARDEN EVIDENCE AT THE LORD ASHLEY SITE

Shaftesbury kept detailed records of his gardens and fruit trees at Wimborne St Giles's house from 1675 to 1682 (PRO 30/24/5/293), and in his notes he gave an account of everything that grew in his kitchen garden. Listed under "Roots" are turnips, carrots, parsnips, "skirrots", and Irish potatoes, which were experimental and luxurious in the 1670s—Percival was to trial them in Carolina. He grew Red and Damask roses, and unspecified "sallet herbs". Eight different fruit and berry varieties were also in the garden including currants, raspberries, gooseberries and quince. Lastly, greens and vegetables included mustard seed, carroway seed, beans, asparagus, artichokes, cabbage, kale, cauliflower, onions, and licorice, a Georgical Committee selection for research.

Several possible economic plant varieties have been identified at the Lord Ashley site (Figure 8.7). Lily family pollen was identified, which includes onion, garlic, leek and asparagus besides flower varieties lily, trillium, tulip, Africa lily and hyacinth (Jones and Larmon 2012:11). Shaftesbury's kitchen garden grew onion and asparagus—the lily pollen may be evidence of those two vegetables at the site. Lily pollen is strictly insect-pollinated and the grains are infrequently found in archaeological sediments; the pollen
represents mostly Old World plants; and because the grains are scarce at the site, just a few grains can indicate economic activity (Jones and Larmon 2012).

*Solanaceae* family pollen was also identified, which can represent tomato, chili, potato, nightshade, eggplant or tobacco (Jones and Larmon 2012). I can only suggest that any these plants were cultivated at the site; however, potato is a possible match since Shaftesbury could have given Irish potato seeds to Percival. Cheno-am pollen was identified, which can represent the Old World crops beets and spinach (Jones and Larmon 2012). Finally, maize pollen and carbonized maize cupules identified through PBOT analyses provide evidence of corn that was grown by Shaftesbury's colonists, the Kussoe Indians who occupied the land prior to 1674, or a native group that predated the Kussoe. Percival sold 28 bushels of corn to Maurice Mathews on 8 October 1679, which is quite clear evidence that the plantation raised corn (Bates and Leland 2006:54).

**FRUIT TREES AND GRAPE VINES**

One pollen type, *Prunus*, can represent cherry, plum, apricot or peach trees. *Prunus* pollen is uncommon in archaeological deposits since they are strictly insect-pollinated, which, when found, denotes the location of the tree that dropped the pollen (Jones and Larmon 2012). The *Prunus* pollen found on site could have derived from either Black cherry or Carolina laurel cherry trees, which produce sour and partly poisonous small fruit, or plum trees like American plum, flatwood plum and Chickasaw plum that are native to the southeastern US (Jones and Larmon 2012:114-115). Maurice Mathews (SP 2000:333) reported he saw "figgs, & peaches enough plums of divers sorts or kind of cherries" during his survey of the Ashley River and similar trees might have been enclosed in St Giles Kussoe. Apricot and peach trees are exotic; peach was introduced to
the region by the Spanish as they explored north of Florida in the 1500s (Clifford 2012). Paleoethnobotanist Gail Wagner identified a fragment of a burned peach pit that was recovered from the site. It is possible that the *Prunus* pollen and peach pit are related and could date to or predate the 1674 settlement.

Relic peach trees may have been present when Percival and his servants arrived at this locale to start a garden. One soil sample location that contained *Prunus* pollen was collected specifically outside of but a few feet adjacent to Building 2. Samples taken at the moat corner and southern arm produced *Prunus* pollen as well; these were the only locations for the pollen. As I mentioned in Chapter 6, Shaftesbury was devoted to his fruit trees and orchards at Wimborne St Giles's house. His personal account book (1682:7) noted that he "Paid Wiseman's bill for trees for Carolina £0:10:0" on 21 October 1677. Although he did not list "Kussoe" or "my Plantation" specifically, this tree entry can be interpreted as something intended for his private venture, not the entire colony or for use at Charles Towne. It may never be known if fruit trees sent from England were experiments at St Giles Kussoe; however more fieldwork in the future could recover more *Prunus* pollen and identify other locations for either local or foreign trees.

Tied to the *Prunus* pollen are *Vitis* pollen and seeds from grapes. The only *Vitis* pollen grain from the site along with two grape seed fragments were identified in two stratigraphic soil layers of fill in the southern arm of the moat while *Prunus* pollen was found in the same contexts and also from a soil deposit adjacent to the moat that may predate the construction of Buildings 1 and 2 (Agha 2016:38-41). Originally thought to be the defensive moat that runaway servants described to the Spanish in Florida in 1679 (Agha 2016:25), recent phytolith analyses from soils nearby the moat provide strong
evidence that the moat was dug to prevent the encroachment of water from the southern and western springheads (Figure 8.8). The identified plant types and families led Jones (2019) to suggest that the areas of the landform that the moat was dug into were once wet enough to sponsor the growth of water-loving cord grass and salt grass, and when the moat was open, the bottom was an intermittently wet environment for water-dependent plants such as sedge, cord grass and cattail. The moat feature was a large perimeter drain that acted partly as an enclosure for the experimental garden on higher ground.

Shaftesbury did not instruct Percival to grow grapevines. However, research and context illustrates Shaftesbury's viticulture interests. Wine production in Carolina may not have been a way for the Proprietors to get rich off exports, but a way to cut off wine imports into the colony. My context for the paradigm of improvement allows me to strongly suggest that vines were not only tried at the Lord Ashley site, but that new, specialized forms of labor were also trialed there by way of enslaved Africans who may have already been familiar with viticulture. Instead of foreign wine imports, Shaftesbury wanted foreign wine laborers imported into the colony to boost the local economy.

**VITICULTURE IN CAROLINA**

Viticulture must be seriously considered as a key component to our interpretations of St Giles Kussoe and Charles Towne. Wine was an English luxury item in the later seventeenth century. Therefore, successful viticulture in Carolina would have been a major materialization of improvement. Wine in the last half of the seventeenth century steadily increased in price (Hori 2008:1466). As a result, the “consumption of imported goods such as wine was a marker of status” because “wine could not readily be produced in England” (Hori 2008:1458). Londoners adopted wine, especially harder-to-get
varietals, and situated the increased cost of the drink within their already inflated spending on luxury items and surroundings. Wine and its price also created an urban, spatial distinction: taverns, located on major thoroughfares as meeting-houses for those who could afford it, were licensed to only sell wine; alehouses, located in “back-alley and minor streets of the City”, catered mainly to the “poorest sections of the community” (McBride 2004:186-187).

Likewise, yeomen and other newly rich English families kept pace and increased demand along with the city. Landowners, or “the wealthiest social group”, increased their spending in the last half of the seventeenth century, which made the value of wine rise (Hori 2008:1469). So, as property and improvement grew, wealth grew, and increased consumption and increased wine prices dovetailed as a result. Such information brings the aspect of private property into focus at places like Charles Towne, where a developed private lot—the Miller site—can represent an almost-urban built environment reflective of privilege and improvement that would have fueled the need for wine. The single wine bottle from Structure 1 contrasted against the 47 wine bottles and other luxurious items from Miller site represents the mindset of an improving property owner. Likewise, the beer produced by Servant A at St Giles Kussoe can be interpreted as a representation of the subaltern, servant class below wine-drinking improvers.

VITICULTURE IN CONTEXT WITH THE IMPROVEMENT OF CAROLINA

Colonial viticulture was the materiality of a mission that began with Samuel Hartlib and the mid-seventeenth century improvers’ movement. In Hartlib's *Legacy of Husbandry* (1655), he explained that the production of English wine, alongside other fruit products like cider, would cut the English dependency on foreign wine imports, especially from
France. He also believed that colonially produced goods would reduce imports into colonies (Grove 1981:28). Wine was a hopeful colonial product for England. Spain in the West Indies, southwest America, Mexico, Central America and the Isthmus of Panama, and France in parts of Florida and much of the North American Atlantic coast were so successful in establishing productive, profitable viticulture industries that both kingdoms outlawed the establishment of new colonial vineyards to prevent internal colonial price wars and adverse affect to export within their own realm (Mishkin 1966:vii-ix, 68). However, reports of wild grapevines in Virginia, Florida, and later Carolina, encouraged English investors and colonial administrators to promote viticulture in America specifically to compete with France and especially Spain (Mishkin 1966:ix).

Virginians in the seventeenth century produced wine from both wild and imported vines but due to the urge for quicker returns on colonial produce, colonists were instead ordered to grow provisions and tobacco, and procure supplies for England's navy and ships (Mishkin 1966:256-258). Likewise, although viticulture proved successful in the Maryland, Maine, New England, New York, Rhode Island, and Massachusetts colonies, investments of time, money and labor were committed to other industries instead of wine production (Mishkin 1966:244-274; Unwin 1998). In Carolina, however, there was a greater effort to ensure that the southern colony would be the wine producer England hoped for (Mishkin 1966:275). English interest under Stuart rule encouraged colonial viticulture between 1662 and 1667, and again from 1679 to 1690, mainly in response to the overproduction and surplus of tobacco (Mishkin 1966:230).

In addition to these policies, the English Crown realized that "skilled vigneron and vintners" were "essential to the oenological prospects of the Southern Atlantic colonies"
(Mishkin 1966:275). That sentiment was echoed by Carolina's colonists: Joseph Dalton (SP 2000:382) wrote to Shaftesbury 20 January 1672 to request shipments of not only "Plants of good Vines" but also "some persons who know the true husbandry of them."

Two years later, coincidentally when Shaftesbury launched his plantation, he (SP 2000:437) wrote the colony that the Proprietors were going to send vines "and men Skilled in the management of them." While Mishkin (1966:266-278) claims that good quality wines and viticulture experiments were productive and successful in Carolina, prospective reports were "insufficient to attract the skills and capital necessary for commercial wine manufacture in the Carolinas."

However, Shaftesbury's improvement-laden intentions and actions in Carolina demonstrate that successful viticulture may have only been possible by those with the power and privilege of private property incorporated through the paradigm of improvement. The dissertation makes the argument that Shaftesbury calculated exactly how to make viticulture work in Carolina and he wanted to use St Giles Kussoe as an outlet for his experiment in the industry. After four years, viticulture in Carolina may not have been successful because there were few to no viticulture specialists—colonists reported an abundance of grapes, not wine. Shaftesbury had the connections, the political power, the economic strength and colonial overreach to procure the specific laborers to finally master grape vines in the colony, and he would demonstrate that he could make it work at his own property.

SUCCESS IN VITICULTURE THROUGH SPECIFIC LABORERS

Specific kinds of labor were required for vines and wine production. Therefore, specific kinds of *laborers* were required at vineyards. When the May 1674 book list is
contextualized within Shaftesbury's ideas for colonial viticulture, he had ample
information at his fingertips to create the perfect plan for raising vineyards abroad. Books
promoting the propagation of fruit orchards, cider production and viticulture—like
several on the May 1674 list—were published midcentury as the Hartlib Circle and later
Royal Society began to invest time in the improvement of England through better food production (Attie 2011; Di Palma 2004:163). As a way to counter French wine imports,
some English authors republished and 'improved' older French garden manuals, which
always included explicit details about French viticulture (Mishkin 1966:215). The May
1674 texts reveal that viticulture provoked a specific, intense ecology that involved
unique and strange soil compositions, different ways to intercrop other plants, refined
grafting methods and techniques for the proper care of vines, and an industrial component
required to produce wine. This kind of ecology was built on experimentation until tests
ended with a productive, healthy vineyard. Shaftesbury's possible attempt to instill
viticulture at St Giles Kussoe is the clearest example of his immersion into the paradigm
of improvement that can be identified: the transformation of part of his plantation into a
wine estate would have been exemplary of the Royal Society's mission.

Although the Society encouraged the growth of fruit trees and vines in as many
places as possible to increase the public good (Di Palma 2004; Drayton 2000:52-54),
husbandry cost money. Shaftesbury (SP 2000:399, 414) may have intended to "lay out a
good deale of money" or even "throw away some money in making some experiments" at
St Giles Kussoe, but as Proprietor, his efforts were at least partly profit-motivated.
Shaftesbury was Chancellor to the Exchequer who managed the kingdom's finances from
1661 to 1667 when he was demoted from that position to serve on the Treasury
Commission—of everyone on the Commission, Shaftesbury's "experience of financial affairs was by far the greatest" (Haley 1968:193-194). A short while later Shaftesbury was elevated to Treasurer of the Household for the Commission until he was made Lord Chancellor of England in 1672.

Both of Shaftesbury's positions can be tied to viticulture and the wine trade. First, the Treasury Commission continuously dealt with the Wine Act of 1660 and Shaftesbury presided over decisions on patents and licenses issued to wine merchants, fee collections, debts, and revenues in relation to the price of wine (Shaw 1905, 1908). Secondly, the Lord Chancellor could set the price of wine each year (Wine Act 1660). Although Shaftesbury was fired as Lord Chancellor in November 1673, he had exposure to the inner workings of the wine trade that may have shaped his ideas about wine production in Carolina. Besides these Economics-based influences on the use of viticulture as improvement for St Giles Kussoe, he had husbandry-based sources to draw from as well.

MAY 1674 BOOK LIST USE FOR VITICULTURE

The May 1674 book list contains seven books that cover viticulture: Parkinson’s *Paradisi*; Markham’s *Country Farm*; Austen’s *Fruit=Trees*; Heresbach's *Rei rusticae libri quatuor*; Evelyn’s *Gardinier*; Plat’s *Eden*; and Phillipes’s *Purchasers Pattern*, which includes a section on gauging wine, ale and beer barrels and casks. These seven works contain explicit details and instructions for the hopeful husband of a vineyard. The eighth work, though, contains the oldest writings on the subject: a compilation of works written by the Roman 'Ancients' Cato, Columella, Varro and Palladius entitled *Rei rusticae auctores latini veteres* (1595). Shaftesbury's motivation for his plantation is eloquently captured in Varro’s *de Re Rustica* ([Varro §18] Thayer 2020): "For nature has
given us two routes to agriculture, experiment and imitation. The most ancient farmers determined many of the practices by experiment, their descendants for the most part by imitation. We ought to do both—imitate others and attempt by experiment to do some things in a different way, following not chance but some system." Written before the birth of Christ, Varro almost foreshadowed the purpose of St Giles Kussoe. If Shaftesbury and Locke talked about Varro and his specific passages, it surely emboldened the former to pursue his plans with vigor. The other books on viticulture would have certainly provided further encouragement.

Gervase Markham’s *Country Farm* (1616) included a book of 22 chapters devoted to viticulture. Markham opened his discussion on vineyards with an important notion: a properly raised and dressed vineyard could bring great profits to an estate. The same was true over a thousand years earlier as Cato also believed that a vineyard was the property owner's best investment. Walter Blith's *English Improver Improved* (1653) noted that fruit orchards raised land values. Colonial land value could rise as well.

Both Markham and Austin covered the soil and air qualities that were best for vines, and advised that plants and crops should test the soil intended for vines to make sure the soil could support a strong vineyard. Clay and gravel as a soil base was preferred to “grow not only luxuriant crops of grain but also very fine vineyards” ([Columella, Book 2:203] Thayer 2020). Parkinson, Markham and Austin explained that vines planted in different kinds of locations in relation to the sun, trees, other plants and buildings brought positives and negatives to the health of the vines. Heresbach (1577:19) noted that vines could grow up the walls of houses and on rooftops; vines could even be trained to grow in “fens and marshes.” These writers viewed vineyard husbandry as a philosophical art,
as Sir Hugh Plat (1653:54) so perfectly stated that vines planted in "a square pit a yard deep, whose banks are sloping and whose earth have been philosophically prepared" produced the best quality grape possible. Soil "philosophically prepared" in any fashion was a reference to the use of the arts, or sciences, to improve land and raise value.

Markham, and Columella before him, provided extensive details on how to plant, raise, cut and prune vines; also, techniques for making excellent tasting wine. Importantly, he discussed methods for grafting a vine cutting onto a rootstock or onto other vines (1616:604-605). Early reports claimed "diverse grape vines...growing without Culture" (SP 2000:74) and "soe many Old vines" (SP 2000:378) that occurred naturally in Carolina. It is highly likely wild grapes grew somewhere within St Giles Kussoe. Wild grapes could have provided rootstock for foreign vine cuttings to be grafted to; this method may have created the successful foreign varieties that visitors to Carolina claimed grew during the 1670s and early 1680s (Crafford 1683:5; Salley 1911:17). Shaftesbury was apparently an expert at grafting fruit trees and, as an expert, he may have worked hard to find people who could graft to his standard.

Markham (1616:605) and Heresbach (1577:80) also mentioned the practice of grafting grape vine cuttings onto branches of cherry, plum and other related fruit trees—both men referenced Columella for this practice. Interestingly, the *Prunus* and grape pollens, as well as grape seed, occur together in the southern arm of the moat, and *Prunus* pollen and grape seed were also recovered from the same location at Building 2. If wild peach, cherry or plum trees dotted the intended spot for the settlement at the Lord Ashley site, did those trees receive grapevine grafts? Could such an experiment explain why *Prunus* pollen and pollen and seeds from grapes were found together? Cato also
suggested that vines should be trained to grow on fruit trees for added sunlight and more fruit yields in smaller spaces. Heresbach (1577:19) suggested walls and roofs for vine growth. The May 1674 book list creates several new ways to interpret the concurrence of fruit tree and grape evidence at the Lord Ashley site alongside the origins of Shaftesbury's enslaved Africans for Carolina.

Cato stressed that slaves were best purposed for labor on vineyards and orchards. Columella was explicit that enslaved laborers on viticulture needed to work as a group and not in isolation because the nature of the work required supervision due to vine sensitivity. As a group, everyone could adapt simultaneously as individuals announced discoveries they made as they dressed vines. Columella also stressed that the ploughmen and vine-dressers should be completely different people and the work should not be performed by the same person. Lastly, Varro provided advice to assist the management of slaves by foremen and estate owners: the foreman should be literate, educated, strong, experienced in farm operations and capable of working alongside the enslaved to set the pace and quality of the work. Varro (Thayer 2020 [§17]) also stressed that the enslaved should come from different nations to reduce domestic quarrels. Lastly, Varro (Thayer 2020 [§17]) was somewhat prophetic in his suggestion that 15 slaves, "an overseer, a housekeeper, ten laborers, a teamster, a mulester and a swineherd," was the adequate number for a vineyard: 15 Africans were enslaved at St Giles Kussoe.

Although the information was over a thousand years old, some of the Ancients' principles, albeit modernized through natural philosophy, were probably what Shaftesbury wanted to transplant to Carolina as he envisioned how enslaved Africans could work his vineyard at St Giles Kussoe. Some of the texts on the May 1674 book list
could have provided Shaftesbury with ample information to assist those at his plantation with successful viticulture: the only thing missing from Shaftesbury's scheme were the perfect laborers.

ORIGINATION OF SHAFTESBURY'S ENSLAVED AFRICANS

Herein lays the crux of this dissertation: the role of Africans within a private property like St Giles Kussoe. Otremba (2012) argues that enslaved Africans partook in the implementation of early scientific practices in Barbados as they worked the sugar mills and were the laborers responsible for physically perfecting sugar technology. In the sixteenth century Caribbean, enslaved Africans unwillingly conducted experiments of new Spanish inventions for pearl diving; they were scouts, translators and seamen that the English depended upon; and in many cases, were trained to do specialized jobs (Bernhard 1985:62-63; Curtain 1998:25-26, 73-75; Guasco 2014:119, 200; Jackson 1924; Parrish 2010:242-243; Smallwood 2007; Vieira 2004:60; Warsh 2014:519-520). The Spanish incorporated Africans into their early mining projects and sugar and wine estates in the Caribbean and Central and South America (Cushner 1980; De la Fuente 2004:140, 147; Morel 2004:100; Rice 1996; Schwatz 2004:177, 188-189; Steckley 1980). My research has found that the English desired Spanish slaves even before they had officially settled their first New World colonies because Africans possessed skills that Europeans required.

Shaftesbury (SP 2000:442-443) wanted to trade with the "the Spaniards for Negroes, Clothes or other Commodities" even though it was illegal. I argue he wanted Spanish trade because he had the political and economic power to both conduct trade and get away with it: he wrote that he was "of all the English Nobility the most affectionate to the Spaniards" and desired trade outside of Charles Towne "with as much secrecy and by as
few persons" as possible. Trade with Spanish Florida was risky. Just a few months after Charles Towne was first settled, the Spanish attempted a naval attack on the new colony that failed due to a hurricane (South 2002:7). Locke Island and Percival were not under Carolina's governor or Grand Council for good reason: the island south of town would have been a perfect place for potentially disastrous trade. My thesis is that Shaftesbury wanted to obtain enslaved Africans who already knew how to work the plants and crops that would make his Carolina estate a laboratory—he needed skilled technicians on the experiments and the first way to get them was through the Spanish in the New World.

Since “most of the skills required [in the colonies] were traditional European skills which slaves newly imported from Africa normally did not have” (Galenson 1981b:158, emphasis mine), Shaftesbury wanted to obtain the slaves he needed regardless of their origin because viticulture was a skill most indentured servants were not accustomed to through their pre-colonial work in England. The custom practiced by English planters in colonies was to obtain skilled white servants to train enslaved Africans in specific tasks and technologies (Galenson 1981b:133-134). However, if white servants were unfamiliar with viticulture, they were no help to Shaftesbury's plans. He instead may have tried to circumvent the lack of skilled white laborers by simply obtaining the enslaved Africans that already had the skills required for the plantation.

THE SOURCE OF THE ENSLAVED

The largest single plantation expenditure in the Percival Account (1680:10) was a credit of £308 to "Sir Peter Colleton for Negroes" on 4 January 1677/8. A corresponding payment of £308 "To Richard Holder Esq. assigned by Sr. Peter Colleton upon a bill from Mr. Perciavall" was entered two months later on 21 March 1678 (Shaftesbury
Account 1682:8). However, paired with the Percival credit for slaves was "vynes £0:18:0", which was the only purchase of vines Percival made between 1674 and 1680. Historically, the word vine referred almost primarily to grapes (Harper 2020). Through my context, I link these enslaved Africans and vines together, and provide evidence that Richard Holder was the connection.

Originally, it appeared that the enslaved came from Barbados through Colleton who was a factor for the Royal Africa Company (RAC) on the island (Agha et al. 2012:24). Colleton was also a sugar planter and owned slaves, some of whom may have been sent to St Giles Kussoe. Colleton and Shaftesbury conducted business together through the Indian trade in Carolina (Agha 2018; Fagg 1970), so a transfer of money and slaves between them was highly possible. However, Shaftesbury was Vice President of the RAC from 1672 to 1674, and while in that position he may have learned of and came into contact with English traders who could procure the certain Africans that he really wanted.

In 1646, the Earl of Carlisle, Proprietor over the English Caribbean, received advice from an agent in Antigua on the best way to obtain enslaved Africans (Pestana 2003:393). The agent advised Carlisle to forgo the local market and instead "order slaves in advance from a trader who would bring them to the islands and turn them over to Carlisle directly" (Pestana 2003:393). Shaftesbury had the connections to follow that line of thought and take action.

For Shaftesbury, Spain was the link between wine and slaves. The English knew that Africans were “highly skilled, technical craftsmen” who were knowledgeable authorities on many potentially valuable commodities (Guasco 2014:200). Through much of the seventeenth century, the Spanish controlled the flow of slaves out of Africa and the
English had to negotiate assientos, or special African slave trade contracts, to fill orders for planters in the colonies (Feiling 1930:125, 128). Between 1663 and 1664, the Company of Royal Adventurers Trading into Africa secured "a Spanish assiento for 3,500 slaves a year" (Feiling 1930:128). Guasco (2014:200) posits that the English knew they needed skilled slaves from the Spanish because those with “special knowledge and experience could help the English develop their own colonial economies.” Spaniards imported Africans to Peru from the sixteenth to eighteenth century to work mines, sugar mills, vineyards, and olive groves (Rice 2011:168). Because vineyard labor was seasonal and episodic, enslaved Africans were taught other skills and trades, like pottery and sugar production. Enslaved Africans trapped within the Spanish colonial system were privy to technologies and sciences that almost no English indentured servants were exposed to. Likewise, West Africans imported directly to the Caribbean by English traders were probably unfamiliar with the kinds of skills Spaniards taught their enslaved. Therefore, Africans with knowledge of Spanish colonial industries and agriculture would have been the laborers fit for Shaftesbury’s experimental plantation.

RICHARD HOLDER, WINE, AND THE SLAVE TRADE

In September 1672, the Treasury Commission, presided over by Shaftesbury, listed Richard Holder alongside 91 other men as bonded wine merchants (Shaw 1908:111-112). Holder was also listed in a smaller group of traders who were awaiting "Spanish and sweet wine bonds" (Shaw 1908:66-72). A year before, Holder was reported to the king by the Treasury Commission for sailing the Pearce, a 45-ton Spanish ship, into the Thames River (Shaw 1908:1128-1149). A Spanish merchant gave Holder the ship as payment for a debt. Then, in February 1677/8, Holder faced prosecution in court because he imported
30 pipes of Canary wine without paying customs. The trial was put on hold because the defendant was "beyond the seas" (Shaw 1911:534-551). The fact that Holder was at sea is highly significant to my interpretations of his role in Shaftesbury's slave purchase because he was an extensive trader along the North African coast and Canary Islands—all potential sources for Shaftesbury's laborers.

Trade made Richard Holder a wealthy merchant. He traded lacquer, iron, brass and alum on the Barbary Coast through Santa Cruz in Algeria in 1679 (Shaw 1913:62-75), and was fined for "a forbidden trade with Sallee", a port on Morocco's coast, in 1686 (Shaw 1923:958-973). He owned three trade ships by January 1690—the Adventure, Exchange and Santa Cruz (Shaw 1931:452-465). Lastly, in 1694 he delivered testimony against the RAC and claimed he had stock with the Company that totaled a massive £40,000 (Scott 1903:247).

His trade through the Canary Islands and Barbary Coast is most important to my thesis. Vineyards were present on Tenerife island since the sixteenth century, but the Canaries did not become the "principal wine island of the Atlantic" until the 1650s when they shifted production from sugar to wine (Steckley1980:337). By midcentury Canary wines became fashionable and favored in London, which increased the number of English merchants who traded with the islands (Steckley 1980:341-343). Aside from the movement of wine, the Canary Islands were also a "way station, or import-export market, for slaves destined for Europe and America" (Stern 1993:65 n.64). Trade with the Canaries was technically trade with the Spanish. Instead of complicated trade in the New World between St Giles Kussoe and Spanish Florida, Shaftesbury may have found a way
to get enslaved Africans with the particular skills he desired by conducting business with
the Spanish in safer, Old World settings—Holder was the merchant that could help.

Archival research found that Richard Holder was only involved with trade in North
Africa and the Canary Islands as his name is not associated with New World English
colonies. Therefore, the enslaved for St Giles Kussoe most likely originated through
Holder's Old World trade connections. Importantly, Locke was simultaneously in an Old
World setting—France—working for Shaftesbury on wine-related matters.

LOCKE'S LABOR IN FRANCE ON WINE RESEARCH

In November 1675, Locke arrived in France for what became a three-and-a-half year
exploration of French viticulture (Lough 1953a). The fruit of Locke’s labor in France was
his presentation of the Observations on Wine, Olives and Silk (1766 [1679]) to
Shaftesbury upon his return to London 1679. The Observations is a condensed version of
Locke's highly detailed daily journal that he used to record information about the French
production of wine, silk and olive oil. Scholars identify Locke's travels in France as
"agricultural espionage" that he conducted for Shaftesbury (Armitage 2004; Unwin 1998;
Wood 1984). Armitage (2004) has identified a Carolinian context within the
Observations and Locke's French trip. This dissertation more strongly connects Locke's
French observations with Shaftesbury's Carolinian viticulture aspirations.

The very first note of substance that Locke chose to write in his journal was about
the way a French peasant worked the soil of an active vineyard, especially the shape and
style of the hoe that was used (Lough 1953a:1). If Shaftesbury was intent on a vineyard
in Carolina, and Locke went to France to partly conduct research for him, then the details
of tools used to work vines could have helped him make the right decisions for what tools
his laborers needed at the plantation. Paired with this mention was Locke's (1766 [1679]:2) note that he had “seen vines and corn interchangeably; viz. two or three rows of vines and then a ridge or two of corn.” Locke's journal embellished on this: "this way, I suppose, the grapes have more both direct & reflex sun & ripen better," which is reminiscent of wall-fruit heat and light reflectivity possibilities discussed in Chapter 6.

Shaftesbury did not instruct Percival to grow corn at St Giles Kussoe. However, ample evidence of corn cultivation has been found at the Lord Ashley site; Percival sold corn locally; and corn was grown by the Charles Towne colonists (Bates and Leland 2006:54; Crafford 1683; Salley 1911:145-146). While it may be archaeologically impossible to find this style of intercropped grapes and corn, it is important contextually in relation to Shaftesbury's ideas for Carolina.

Locke (1766 [1679]:3) reported that the best wine was grown in soil “so stony, that one can see no earth at all” and also a “white sand mixed with a little gravel, which one would think would bear nothing” but when he witnessed “two vineyards bounding one upon another" he learned that the rocky soil consistently produced good wine while the other vineyard with unprepared soils made "bad wine.” He listed information about how and when the French turned their soils and how they plow between rows and plants with different kinds of tools.

Locke (1766 [1679]:2) also noted that vines were set in both disturbed ground and trenches. Phytolith analyses of sediments from the Crop Garden and Lord Ashley site identified grass varieties consistent with disturbed soils associated with agriculture and human land alteration; grape pollen, which denotes vine locations, was found in context with those phytoliths. Locke (1766 [1679]:7) said the best dung for fertilizer was either
from pigeons or hens, but never horses or related livestock; dung fungal spores identified at the Crop Garden can be interpreted as fertilizer (Cummings et al. 2007). The shallow trench features they discovered at the Crop Garden could have been linear paths of disturbed and amended soil that supported vines.

Vineyards in France were planted on plains and hills with indifference, but hills “opening to the east or south” made for the best wine (Locke 1766 [1679]:2). The Lord Ashley site sits on the toe of a sandy ridge that descends south into a spring-fed boggy wetland. Rows of grape arbors aligned east to west may have once lined the sloping hill. Locke also wrote that “a vineyard from its planting will last fifty, eighty, or an hundred years” (1766 [1679]:3). Locke's statement echoes the Industry provision in his labor theory of property: enslaved Africans could provide the perpetual, never-ending labor to tend vineyards for decades. Plus, the integration of new vines into older established vineyards introduced complexity to wine: "the older the vineyard the fewer the grapes, but the better the wine" (Locke 1766 [1679]:3). Locke (1766 [1679]:3) added that "new-planted vineyards produce more, but the wine not so good": the wine maker's work for the best quality and volume possible was a perpetual experiment.

Locke (1766 [1679]:54-57) mentioned that the French sometimes planted fig and pear trees throughout their vineyards. Possibly in conjunction with his observation, Locke sent pear, fig and plum trees and grafts from France to Shaftesbury that were growing at Wimborne St Giles by 1679 (PRO 30/24/5/293). Besides what Shaftesbury planted himself, part of Locke's shipment may have been forwarded to his plantation for trials alongside vines. Locke (1766 [1679]:54-57) also described the French techniques of drying plums, peaches and pears for preservation—information that could be used by the
encloser of an orchard to overcome the Spoilage provision. The presence of *Prunus* pollen with both *Vitis* pollen and seeds at the Lord Ashley site is suggestive of the paired plantings Locke witnessed, even if the fruit trees at Lord Ashley site were peach trees present before 1674.

**WATERMELONS FROM FRANCE?**

Locke also sent melon seeds to Shaftesbury, which arrived in London 18 April 1678 (DeBeer 1976b:566, no. 378). A month earlier Shaftesbury paid Holder for enslaved Africans. A watermelon seed was recovered at Lord Ashley site from a trash pit at Building 3 (Agha 2016; Johanson and Hollenbach 2014). Watermelon, along with peaches, can be attributed to Native American propagation after Spanish contact (Blake 1981). The origin of watermelon is Africa and it is historically associated with enslaved Africans in the New World (Blake 1981; Carney and Rosomoff 2009:22; Paris et al. 2013). Because the watermelon seed came from Building 3, where a large amount of HLE—commonly associated with enslaved Africans—was found, the watermelon seed can be attributed to enslaved Africans.

However, watermelons also have antiquity to medieval-period France and later (Paris et al. 2013), which means watermelon may have been among the melon seeds Shaftesbury received from France. In the 1620s and 1630s colonists in Maryland, New England and the Caribbean were experimenting successfully with watermelon (Blake 1981:194). Melons, then, could have been yet another plant in Shaftesbury's portfolio of experimental crops for Carolina. Or, the watermelon represents enslaved African botanical transfer from their Old World origination. It is very possible that the enslaved
Africans and possibly vines from Holder, and the seeds, vines and trees from Locke were collectively sent to Carolina and St Giles Kussoe.

POSSIBLE EVIDENCE OF SHAFTESBURY’S VINEYARD EXPERIMENTS

The 1682 Carolina pamphlets by Ashe and Wilson gave accounts of wine and vineyards that can be contextualized through Shaftesbury's plantation. First, Ashe (Salley 1911:14) exclaimed that "if the Planters as industriously prosecute the Propagation of Vineyards as they have begun; but Carolina will in a little time prove a Magazine and Staple for Wines to the whole West Indies." Vineyards grew and wine was produced in the colony; all of these accounts were taken by multiple people and their firsthand knowledge. Ashe and Wilson (Salley 1911:144, 174) both wrote of five different varieties of natural grapes that colonists had propagated. For foreign grape varieties, Wilson (Salley 1911:174) wrote that “some of the Lords Proprietors have taken care to send plants of the Rhenish, Canary, Clarret, Muscatt, Madera, and Spanish Grapes, of all which divers Vineyards are planted." Ashe (Salley 1911:144) echoed the same: "some of the Proprietors and Planters have sent them [planters] the Noblest and Excellentest Vines of Europe, viz. the Rhenish, Clarret, the Muscadel and Canary, etc.." Shaftesbury (PRO 30/24/5/293) listed "Muskat" and "Clarett" grape varieties in a "Plants, fruits, trees and flowers to be sent for from foreign parts" list in his garden notebook—the connection between Carolina's grape varieties and Shaftesbury is strong.

Was Shaftesbury the Proprietor that sent those grape varieties? Were the Spanish or Canary vines procured by Holder along with the enslaved for St Giles Kussoe? Locke sent French grapevine cuttings to Shaftesbury in 1676. While French vines do appear in the lengthy and detailed garden notebook of Wimborne St Giles's house, Locke's name
was written over 20 times but only in association with fruit trees and never vines (PRO 30/24/5/293). Then, did at least some of Locke's vine cuttings go to Carolina? Was Locke the source for the French varieties mentioned in travel accounts?

Unwin (1998:149-150) suggests that Locke's travels through southern France were designed to study viticulture and other crops and plants in a warm, temperate climate that "might be suited to cultivation in north America." I suggest the location was specifically Carolina. While Locke was near the Mediterranean, Richard Holder may have been on the coast of North Africa engaged in trade, and possibly, the procurement of Africans who knew how to care for vines and make wine for Shaftesbury. The way Locke pursued his research into viticulture and wine "emphasize the importance that he attributed to empirical observation in science" (Unwin 1998:145). Once enslaved Africans were working grafted vines in Carolina of French and Spanish origins, the true experiment began: the improvement of enslaved African labor. More work may find if vineyards were established at St Giles Kussoe. Theoretically, the possibility is high.

CONCLUSIONS

Carolina has been referred to as a "colony of a colony" (Wood 1974:34) due to the theory of a strong 1670s Barbadian-led influence and presence in the colony. St Giles Kussoe can be interpreted as a 'colony within a colony' due to its size and plan to settle families into townships under Percival's "Government" (SP 2000:439-440). This dissertation identifies the entirety of the plantation as an experiment: as a real-world Salomon's House. The enslaved Africans, their presence, and most importantly their labor at St Giles Kussoe were an 'experiment within an experiment.' As Percival and possibly other unnamed overseers or managers watched over the enslaved at their tasks, those
overseers conducted surveillance-type research on the laborers as Africans, as slaves, as farmers, and as newly trained scientific technicians who executed experimental husbandry on foreign and local plants in a setting completely foreign to everyone. The enslaved were more than prisoners of a plantation: they were imprisoned, "triply invisible" technicians within a laboratory.

Did indentured servants experience the same trials as enslaved Africans? Were servants watched similarly? Or, did servants do work deemed less scientific and less improvement-laden than the enslaved? New evidence of indentured servant economies based at St Giles Kussoe sheds light on the kinds of labor that servants conducted for their own benefit. The valuable products servants produced can also inform us of production during a time period when no monocrop agriculture was practiced because it was not yet mastered. Thus, a fuller understanding of the plants, trees and crops that were grown at places like St Giles Kussoe and Charles Towne can expand our knowledge of the range of activities and economic potential present in seventeenth century Carolina.
Table 8.1 Evidence for tree types at Lord Ashley site compared to historic descriptions of the Ashley River.

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<th>Pollen evidence&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mathews evidence&lt;sup&gt;b&lt;/sup&gt;</th>
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<td>Wax myrtle</td>
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<sup>Note</sup>: Center horizontal line splits matched types (above) from unmatched types (below).

<sup>a</sup>Derived from Jones (2013) and Jones and Larmon (2012).

<sup>b</sup>Trees identified by Maurice Mathews (SP 2000:333).
Figure 8.1. A facsimile of the 1671 Culpepper plat with phytolith samples (Specimen 1=red, Specimen 2=pink) in relation to Structure 1 (blue) and Crop Garden (green).
Figure 8.2. The features analyzed for archaeobotanical remains (dark gray) in relation to Structure 1.
Figure 8.3. The features analyzed for archeobotanical remains (green) and interpreted planting holes (gray) at the Crop Garden.
Figure 8.4. Two soil profile views of the Haskins Plantation cellar excavation (note prepared clay fill on bottom picture; photos by author).
Figure 8.5. A facsimile profile drawing of the Haskins cellar with interpreted soil descriptions (top); three diagrams that illustrate how this cellar may have been created (below, follow left to right).
Figure 8.6. Three images of the surface of the Building 2 cellar at the Lord Ashley site; top right image is for scale purposes (note the straight line made by the clay fill against subsoil in the bottom right photo).
Figure 8.7. Lord Ashley site plan with locations of buckwheat (blue), Lily family (red), maize (yellow), Solanacea (green), Prunus (orange) and grape (purple) pollen.
Figure 8.8. Lord Ashley site plan with locations of phytolith samples and evidence of water-loving plants (salt and cord grasses=dark green, cattail=brown, sedge pollen=dark blue, sedge phytolith=light blue, light green=water tupelo).
CHAPTER 9

CONCLUSIONS

This dissertation demonstrates that the experimental paradigm of English improvement and the traction it gained through elite political and economic power influenced the development of Carolina. The colony and the First Earl of Shaftesbury’s St Giles Kussoe plantation can be interpreted as examples of the adoption and implementation of improvement as influenced by the Royal Society of London. My research united multiple lines of information into a context statement that defines the materiality of improvement, which prefaces my interpretations of four archaeological sites representative of 1670s Carolina. Materiality identified the potential source material for John Locke’s labor theory of property, which was used to construct Shaftesbury’s plantation. The materiality of improvement perspective brings visibility to the material signatures for private property and the commons, and the various forms of improvement through enclosures, pottery, glass, metal, plants and animal remains. Lastly, this research crafts new ways to interpret and understand the social positions of laborers, both servant and enslaved, within the primordial proprietied landscape of 1670s Carolina.

Historical political ecology aids in the identification of the political economy of colony building and the resultant ecological ramifications of 'planting' people and plants into foreign locales to grow empire. Paper and soil archives are read anthropologically to recognize the fact that the written word and the tangible historic artifact do not have the final say on what people did in the past. Decisions changed, plans were altered, and
things were used that left no trace behind for future scholars to learn about, study and find. Historical political ecology also helps us better understand the kind of power property owners held and how they used it to socially engineer both the land they enclosed and labor they controlled. While this dissertation focuses on the advent of English science and the conversion of improvement into a paradigm used to better society and empire, historical political ecology can be utilized to study and 'study up' how colonialism coerced social agents to create ecologies based on property, power and privilege. Besides Carolina, this theory can be employed through research into other colonies both before and after the 1660s—strong ecologically-centered studies are lacking in our collective scholarship of the seventeenth century English colonial empire.

This dissertation actively utilized Locke's labor theory of property as a test against a piece of real-world private property. The relationship between Shaftesbury and Locke should be considered as a major influence in the creation of Locke's theory. The work these two men conducted and their time together must be viewed critically in regards to colonial matters and especially the formation of Carolina and its political economy, which was built almost solely upon property relations. It should be apparent that a colony founded on private property ought to be investigated and understood first and foremost through property rights and the social relations those rights created and dictated. Once property is identified then a better understanding can be gained for the ways people used and interacted with it. Carolina society was built upon such interactions.

Property dictated the use of space. The interpretation of artifacts in space is the hallmark result of archaeological method and practice. When property is positioned ahead of all else, landscapes take on different meanings that allow for new interpretations of
artifacts and archival material. Buildings that are normally labeled 'slave cabin' or 'planter residence' upon discovery should not be named so easily or quickly. Tangible property lines from different time periods become social lines that demarcated human control, conformity and order. We have labeled and interpreted buildings based mostly on the material culture found in association with them. The work conducted on Structure 1 at Charles Towne demonstrates that ignoring property lines, especially those defined archaeologically, can lead to unclear interpretations about the past. If property is used as an interpretive tool, the past people who worked to make and manage property become visible in new and important ways.

A materiality of improvement also levels who 'elites' were in colonies during the seventeenth century. Archaeological sites may have been interpreted in the past as the settlements of elites based on certain qualities and quantities of artifacts and architecture. Those elites, however, may not have been elites at all but instead were burgeoning yeoman farmers with small amounts of wealth who took a chance on Carolina. In contrast, an English estate owner may have had family wealth for generations, and if they settled in Carolina, they would appear as an elite person archaeologically as well. Both yeoman and estate owner might have had Chinese porcelain, fancy furniture and refined stemware for wine, but socially, politically, and economically they were very different. The yeoman, in contrast, might not actually be considered elite at all. Here, knowledge of what people came from, not just where, can aid our historical archaeological interpretations in ways that reflect the reality of seventeenth century society—a society filled with those who had property and those who did not.
My use of *The New Atlantis* as a metaphor for reading Carolina's 1670s origins makes visible the potential laboratory settings that may have existed in the colony besides St Giles Kussoe. The Crop Garden at Charles Towne exhibits evidence of experimentation outside of private property, which means that properties other than Shaftesbury's could have employed improvement on a paradigmatic scale and attempted experiments recognizable as Royal Society-encouraged trials. Interpreting an estate or plantation in Carolina as a laboratory before 1700 realigns the labor of those who worked there and changes our view of the kinds of work laborers performed: enslaved Africans and indentured servants were technicians who ran experiments. We tend to think enslaved Africans were not harnessed for their minds until mid-eighteenth century when Carolina planters sought rice-growing West Africans for their traditional agricultural skills (Carney 2001; Carney and Rosomoff 2009; Fields-Black 2008; Littlefield 1981). This dissertation argues this practice was conceived alongside the settlement of Carolina in 1670. We can now study the fallout from the loss of Carolina's early laboratories and how that affected the evolution of African slavery into the eighteenth century.

**FINAL THOUGHTS**

Besides wine, silk production (sericulture) in Carolina was frequently mentioned in the 1670s correspondence between the Lords Proprietors and colonists. Although it was never completely profitable and minimal, it was physically produced and exported (Marsh 2012). However, over the last 50 years historians have described sericulture, and almost all other similar experimental pursuits, "as a commercial failure" and "if mentioned at all, is frequently relegated to references in quirky footnotes or dismissed as a utopian fantasy that was entertained only by metropolitan propagandists and armchair
imperialists" (Marsh 2012:808). The experimentation process has not been investigated because experiments can lead to failures, and failures are often described negatively by historians. Failure was to be expected; failures have always been a crucial part of the scientific process. Important to remember is that the experiments conducted, regardless of their outcome, were coordinated and executed through a rigidly hierarchical chain of power that connected someone as powerful as the First Earl of Shaftesbury to white subaltern servants in England, and even enslaved Africans in the American colonies.

This dissertation has clearly demonstrated that when early Carolina is viewed as an arena of experimental science that occurred on specific kinds of properties, the agricultural "failures" were actually components of an intense and critical scientific process that prefaced the economic character of the colony. Science, then profits—this viewpoint should be adopted in future scholarship concerning the origins of Carolina. Various early colonial accounts of Carolina mention viticulture yet there has been no clear context within which to critically study the product or its production. This dissertation provides that context. In the future, historians, anthropologists and archaeologists should read and excavate the colonial past with an understanding of early English sciences and scientific practices. Approaches to colonial development that consider early science will contextualize Carolina's history in more powerful ways that can sponsor new forms of academic multidisciplinary collaboration, innovative archaeology projects, and new critical histories.
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APPENDIX A

TRANSCRIPTION OF INDENTURED SERVANT DEPOSITION, ST

GILES KUSSOE, CAROLINA, 1682 (C 9/96/98)

Sold by some of the late Earl’s Servants at St Giles as this defendant
is informed but to the late Earl of Pembroke’s Steward for his Lordship’s
use 17. Flitches of Bacon 2 hogsheads of Strong Beare 10 Turkeys &
419 lbs. of Butter for 29l. 4s. 4 ½d. but the said Earl of Pembroke’s dyeing
shortly after the said money cannot yet be provided by this Defendant Use. Sould
by some of the said late Earl’s Servants unto Mr. Sparke one flitch
of Bacon 3 doz. of butter and 2 Turkeys at £1 11s. 6d. which this Defendant
cannot of yet receive.