Consumption of Sugar in the British Atlantic World 1650 – 1720

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Sugar in the British Atlantic World 1650-1720

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Above all, I thank my family. Alice and Ursula are sisters in every sense of the word. Words cannot express my gratitude for my parents' boundless affection and support. I dedicate the thesis to them, with love.

Covid-19 Statement

I had undertaken the majority of the archival research for the project before March 2020. However, I had two trips scheduled to visit archives in the North East United States which I have been unable to take. During these visits, I intended to conduct a much broader investigation into the spread of sugar across North America. These plans included looking at the use of sugar as a medium of exchange, and the importance of the good in facilitating inter-imperial exchange. I expected to use this material when writing Chapter Four. As I did not have access to this extra archival material, I pivoted to focus on the economic activities of women in the chapter, and relied on digitized court records and probate inventories. This source material was not as wide-ranging or varied as that used in the other chapters, and consequently, the arguments of the chapter are somewhat narrower than the other three and the text is shorter. However, as I highlight in the Conclusion, the arguments made in Chapter Four open up many interesting and productive questions. I see the work as a valuable jumping off point from which to investigate women's contributions to the sugar trade more widely as well as to look in more depth at the role of sugar in the early stages of North American capitalism.

Short Abstract

This DPhil thesis, *Sugar in the British Atlantic World 1650-1720*, seeks to analyse the effect and extent of the sugar trade in the seventeenth century. By 1700, sugar was one of the most important commodities in Europe. It was the driving force behind the trafficking of hundreds of thousands of people, huge accumulation of capital, the growth of international trade, and a number of important subsidiary industries. The development of the institution of chattel slavery and its influence on the history of capitalism has been the subject of many scholarly investigations, however there has been comparatively little work done on the consumption on sugar itself. The thesis, therefore, examines trade in sugar across the Atlantic Ocean and tracks the ways in which the good was consumed.

The intellectual contribution of the thesis comes from its discussion of extensive archival material which identifies the extent of early sugar consumption and which traces how the good transformed from luxury to everyday comestible. Building on from this, the work also seeks to understand the repercussions of such consumption for the Atlantic economy. It demonstrates the key role played by sugar in the rapidly changing economic systems and culture. Tracking consumption of sugar in the British Atlantic world tells us more about the state of the sugar trade as a whole, and the global economic system which it helped to forge. The research gives insight into the development of international trading networks, the commercialisation of the British Atlantic economy and, underneath it all, the reliance of the metropolitan environment on exploitation in the colonies.

Long Abstract

By 1700, sugar was one of the most important commodities in Europe. It was the driving force behind the trafficking of hundreds of thousands of people, huge accumulation of capital, the development of a system of international trade and a number of important subsidiary industries. The development of the institution of chattel slavery and its influence on the history of capitalism has been the subject of many scholarly investigations, however there has been comparatively little work done on the consumption on sugar itself. Yet, the sweet tooth of humankind encouraged an industry which had monumental effects on the global economic system. This DPhil is an investigation into how people bought and ate sugar across the British Atlantic world from 1650 – 1720. It seeks to understand how sugar became ubiquitous across the socio-economic hierarchy, and what the repercussions of such increasing consumption were for the Atlantic economy.

A study of a commodity has the potential to be both focused and capacious. My initial inquiry homes in on trade and consumption of sugar produced in the British Caribbean, but my eventual scope is international and interdisciplinary. In order to trace sugar across the Atlantic world, from the toil of the plantation via the smoky heat of the refinery to the point at which the sweet crystals dissolved on a consumer's tongue, I investigate printed and manuscript sources from recipe books and household accounts to travel diaries, legal petitions, paintings, plays, and poems. Sugar was a key part of the servants' diets at the stately Chatsworth House in Derbyshire, it paid the wages of farm labourers in New Jersey, Harvard students paid their fees in sugar (and consumed it at their commencement feasts), London tradespeople lapped it up in the form of jams and preserved fruits and Boston grocers sold gingerbread.

In this thesis, I focus on the importance of such early consumer desire. I locate consumer demand at the forefront of the emergence of capitalism. I demonstrate that sugar was consumed, in a greater variety of ways, by people across the socio-economic spectrum, from the very beginnings of the trade in the West Indies. The implications of this research are manifold. Tracking consumption of sugar in the British Atlantic world tells us more about the state of the sugar trade as a whole, and the global economic system which it helped to forge. The research gives insight into the development of international trading networks, the

commercialisation of the British Atlantic economy and, underneath it all, the reliance of the metropolitan environment on exploitation in the colonies.

The thesis is comprised of four discrete but interlocking chapters. Each chapter contends with its own distinct historiographies and disciplinary boundaries. Therefore, each one makes individual contributions to a number of different literatures. In Chapter One, I detail the historiographical contribution of the thesis by outlining the current literature on sugar production and consumption. Historians of production see the latter part of seventeenth century as the turning point in the production of sugar. However, consumption of and demand for sugar have received comparatively less attention for the same time period. Here, I attempt to nuance the relationship between supply and demand and analyse the extent and scope of sugar consumption during this period. I add archival weight to the current literature on sugar consumption by demonstrating precocious consumption of the good and the ways in which it came to be mass-consumed. In Chapter One, I also open up a discussion of the wider repercussions of the investigation. Chiefly, I argue for the importance of the sugar trade in the history of capitalism and explain how the thesis contributes to ideas advanced by Eric Williams in *Capitalism and Slavery.* Williams argued for the importance of slavery to British economic growth. I argue the same here by providing a more detailed understanding of the development of the sugar refining industry in England and North America and its role in nascent industrialisation; the place of North American consumers in the Atlantic economy; and the changing economic relationship between the metropole and colonies.

Chapter Two discusses the changing nature of the sugar industry using official customs statistics to track trade in sugar through English ports. I re-evaluate the official trade statistics used by so many trade historians previously. The 'Book of Tables', 'Inspector General's Ledgers' and Caribbean export figures are more detailed (and revelatory) than existing studies which use them suggest. They can tell us more about the geographic extent of the trade, and shifting domestic consumption patterns than has been acknowledged thus far. Over the course of the seventeenth century, more sugar arrived in England, and more was processed by domestic refiners and shipped out to the rest of Europe. I look at the rise of sugar refineries across the country and show that sugar was an example of precocious industrialization and had wide ranging effects on the coal, copper, coopering and grocery trades. The new figures are an important contribution to scholarship on the role of Atlantic slavery in England's economic development and its industrial revolution.

In the Chapter Three, I consider local source material to investigate the ways that sugar entered the homes and mouths of the population at large during the seventeenth century. Drawing on the same import statistics as Chapter Two, I begin by calculating estimates for *per capita* consumption of sugar for both England and America in the seventeenth century. My research produces new figures which are larger than those which have been calculated previously. The geographical scope here is broader, and I draw North America into the discussion to analyse consumption patterns across the emerging British empire. Sugar pervaded the consuming environment of the early Atlantic world. It was in the preserves and the puddings, the sauces and sweetmeats, the cakes and the candies. Far from being a luxury, or the preserve of the élite, sugar was a heterogeneous good, available in a number of different forms at a number of different price points. It could be consumed as an expensive white powder, as cheaper brown crystals, or as sticky treacle, known as molasses. Following more in the conventions of social and cultural history, this chapter also provides most of the qualitative source material which, in turn, supports the more economic arguments of Chapters Two and Four. I weave a broad range and substantial volume of source material together to demonstrate the pervasiveness of sugar across the Atlantic world. Such widespread availability suggests that the desire for sweetness led ordinary consumers to participate in a global marketplace much earlier.

While Chapter Three considers the consuming environments of England and North America together, in Chapter Four, I turn to New England specifically. I show sugar to be deeply embedded in the local marketplace. I look in particular at the ways in which the labour of ordinary women facilitated and enabled the sugar trade in the colony. I argue that a 'capitalist energy' emanated from the colony even at this early date. Women's work provided a vital link in the chain of sugar consumption. Women produced goods for the market to exchange for sugar and they then transformed this sugar from a raw commodity into palatable dishes. I argue that such labour was integral to the shaping of the New England mercantile enterprise and the integration of the economy into the transatlantic market. At the same time, when women traded the products of their domestic industry for the imported commodities, they did so in informal and non-commercial ways. Therefore, through sugar, we can recognise and delineate the distinctive character of the seventeenth-century New England economy. Even as commercial transatlantic markets opened, vestiges of non-commercial forms of exchange persisted. The chapter consequently examines the precise interface of the transatlantic market

and informal networks of exchange. It is in Chapter Four, furthermore, where I focus most intently on the interplay of biology and economy infrastructure. Consumer desire needs to be synthetized with a study of economic systems. The human body's predisposition explains *why* sugar was desirable; looking at women's labour shows *how* it was accessible.

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Introduction

On the 25th September 1800, 13-year-old George King crossed the threshold of No. 10 Fish Street Hall, London. Inside the door, he found the shop of Mr John Browne, a grocer and confectioner. Astounded and enchanted, he took in his surroundings, a literal manifestation of the oft-repeated phrase 'a child in a sweet-shop'. George recorded the wonderful moment years later in an autobiography, writing that: 'I cast my eyes around and was delightfully surprised at seeing so many Hogsheads of Sugar and boxes of Raisins which I anticipated I should soon have my fill'.[1]

George had arrived at Browne's shop to start his apprenticeship. He had been a foundling; scooped up by the famous charitable enterprise based in Bloomsbury. Brainchild of the philanthropic sea captain, Thomas Coram, the Foundling Hospital had been set up sixty-one years earlier with the express intent of looking after 'exposed and deserted young children', just like George.[2] But, in September 1800, the teenager was taking his first steps in the world outside the hospital. He went on to lead a full and exiting life, fighting in the Battle of Trafalgar, and left for posterity a detailed autobiography describing his adventures. The text is the only extant first-hand account of the life of a foundling born in the eighteenth-century. It provides valuable insight into both the activities and the inner emotional life of a historical figure. Furthermore, it serves as one example of the role played by foundling children in the consolidation of the British Empire at home and abroad. These children became valuable members of the armed forces.[3] It is George's description of his pleasure at seeing the hogsheads of sugar however that this thesis draws upon and investigates further. The sheer joy at seeing such an abundance of sweet treats will be a feeling familiar to many of us. Our taste-buds start to tingle, our mouths water, we salivate in expectation at the prospect of consuming. We only need to turn to the faces of children to understand the sheer joy generated by those first tastes of sweetness. Sugar is intoxicating and ambrosial.

[1] 'Autobiography of George King, Seaman and Greenwich Hospital Pensioner, 19th century MRF/85 (National Maritime Museum, Greenwich) f.1. Cited in Helen Berry, *Orphans of Empire: The Fate of London's Foundlings* (Oxford, Oxford University Press, 2019) p. 148.
[2] Hugh Chisolm (ed.), 'Foundling Hospitals', *Encyclopaedia Britannica*, Vol. 10 (Cambridge, Cambridge University Press, 1911) pp. 246-47.
[3] Helen Berry, *Orphans of Empire*, p. 277.

Introduction

The title of this DPhil thesis is *Consumption of Sugar in the British Atlantic World 1650-1720*. At its heart, it seeks to understand and to analyze the effect and extent of sugar's intoxicating power 150 years before George entered the confectioner's shop. By 1700, sugar was one of the most important commodities in Europe. It was the driving force behind the trafficking and enslavement of hundreds of thousands of people, huge accumulation of capital, the development of a system of international trade and a number of important subsidiary industries. The development of the institution of chattel slavery and its influence on the history of capitalism has been the subject of many scholarly investigations, however there has been comparatively little work done on the consumption on sugar itself. This thesis, therefore, is an investigation into how people bought and ate sugar across the British Atlantic World from 1650 – 1720.

In this Introduction, I lay out the scope of the thesis in more detail and elaborate on the geography and chronology it covers. I give an overview of the original contributions it makes to the several bodies of historiography with which it engages. In the chapters which follow, I will examine the rise of trade in sugar across the Atlantic Ocean in the seventeenth century and track its consumption. I will demonstrate the vital role played by sugar in the rapidly changing economic systems and culture of the seventeenth-century British Atlantic World.

I follow this overview with a summary of the current science on human beings' propensity for sugar, and the body's response to its ingestion. George King's delight in the confectioner's shop, and the delight of men and women who lived before him is key to understanding the good's spread and the effects it had. The sweet tooth of humankind had a galvanising effect on both the economy and the culture of England and British North America and beyond. Throughout the thesis, particularly in Chapters Three and Four, I describe and explore the act of eating sugar. However, the point at which sugar enters the mouth, and the physical reaction to it by the consumer are of such importance to the overall arguments of the project that I introduce them fully here. It is my hope that they resonate throughout the remainder of the thesis – leaving, as it were, a sweet aftertaste or a sticky residue. Recognising the human predisposition for sugar is central to understanding the cementation of consumer demand and to understanding more about why, as more sugar was produced, more of it was incorporated into diets with such ease. It must be also recognised that sophisticated economic systems and trading networks were vital to facilitating the spread

of the good. Throughout the thesis, therefore, I argue for a synthesis of these two perspectives and show that both biology and economic infrastructure enabled sugar's spread.

The project is chiefly concerned with how the Atlantic economy changed and developed around the sugar trade. The chapters, therefore, all navigate a central point of tension. They show the importance of the sugar for consumer satisfaction, expanding trade networks and for economic growth while acknowledging that this 'progress' fostered enslavement, inequality and racism. Read this way, the sticky residue left by sugar becomes a sickly excrescence. This story of sugar is bittersweet.

Project Overview

The thesis is comprised of four discrete but interlocking chapters. Each chapter contends with its own distinct historiographies and disciplinary boundaries. Therefore, each one makes individual contributions to a number of different literatures. When read as a whole, however, the dissertation is concerned with several fundamental points. I argue that during the seventeenth century sugar became an item of mass-consumption, consumed by a wider variety of people than we have assumed. Building out from this key tenet, I also seek to understand just *how* sugar became ubiquitous across the socio-economic hierarchy, and what the repercussions of such consumption were for the Atlantic economy.

The intellectual weight of the project lies in the wealth of archival sources drawn upon to demonstrate these points. Piecing together an extensive range of quantitative and qualitative sources, I add archival weight to literature which argues for early mass-consumption of sugar and advance arguments about how and why the ways in which this affected wider economic circumstances. A study of a commodity has the potential to be both focused and capacious. My initial inquiry homes in on trade and consumption of sugar produced in the British Caribbean, but my eventual scope is international and interdisciplinary. In order to trace sugar across the Atlantic world, from the toil of the plantation via the smoky heat of the refinery to the point at which the sweet crystals dissolved on a consumer's tongue, I investigate printed and manuscript sources from recipe books and household accounts to travel diaries, legal petitions, paintings, plays, and poems. Commodity histories are now commonplace as a genre, and sugar consumption has been tackled by anthropologist Sidney

Mintz who arguably produced the first of such works.[4] However, elements of the early sugar trade and consumption has not been the subject of sustained investigation. Furthermore, England, the Caribbean, and British North America have not been considered together. My work draws on a greater variety of sources than preceding studies, explores a broader geographical area, and shifts the chronology back in time. I argue that trade in sugar was a significant driver of economic change across the Atlantic world.

Chapter One functions as an extended introduction where I set out the historiographical background which informs my thesis as a whole. Historians of production have identified the latter part of seventeenth century as the key turning point in the production of sugar. It is during these years that plantation agriculture, the use of enslaved labour and the resultant expansion of the trade really take off. Consumption of and demand for sugar have received less attention for this period. In response, I attempt to nuance the relationship between supply and demand by showing the extent of sugar consumption during this period. I add archival weight to the current literature on sugar consumption by demonstrating precocious consumption of the good and the ways in which it came to be mass-consumed. The implications of this research are wide-ranging. They change our understanding of the Atlantic economy as a whole. In Chapter One, therefore, I also open up a discussion of the repercussions of the investigation and describe the ways in which I am building on the ideas of Eric Williams advanced in *Capitalism and Slavery*.[5] Chiefly, I argue for the importance of the sugar trade in the history of capitalism and the development of the British economy. In the following chapters, I support this argument with detailed investigations of the expansion of the sugar refining industry in England and its importance for nascent industrialisation, the role of North American consumers in the Atlantic economy, and the changing economic relationship between the metropole and colonies.

Chapter Two discusses the changing nature of the sugar industry using official customs statistics to track trade in sugar through English ports. I re-evaluate the official trade statistics used by so many trade historians previously. The 'Book of Tables', 'Inspector General's Ledgers' and Caribbean export figures are more detailed (and revelatory) than existing studies which use them suggest. They can tell us more about the geographic extent of the

[4] Sidney Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (London, Penguin, 1985).
[5] Eric Williams, *Capitalism and Slavery*, Third Edition (Chapel Hill, University of North Carolina Press, 2021)

trade, and shifting domestic consumption patterns than has been acknowledged thus far. Over the course of the seventeenth century, more sugar arrived in England, and more was processed by domestic refiners and shipped out to the rest of Europe. I look at the rise of sugar refineries across the country and show that refining sugar was an example of precocious industrialization and a heat-intensive industry which had effects on the coal, copper and grocery trades. The new figures are an important contribution to scholarship on the role of Atlantic slavery in England's economic development and its path to industrialisation.

In the Chapter Three, I consider local source material to investigate the ways that sugar entered the homes and mouths of the population at large during the seventeenth century. Drawing on the same import statistics as Chapter Two, I begin by calculating estimates for *per capita* consumption of sugar for both England and America in the seventeenth century. My research produces new figures which are larger than those which have been calculated previously. The geographical scope here is broader, and I draw North America into the discussion to analyse consumption patterns across the emerging British empire. Sugar pervaded the consuming environment of the early Atlantic world. It was in the preserves and the puddings, the sauces and sweetmeats, the cakes and the candies. Far from being a luxury, or the preserve of the elite, sugar was a heterogeneous good, available in a number of different forms at a number of different price points. It could be consumed as an expensive white powder, as cheaper brown crystals, or as sticky treacle, known as molasses. Following more in the conventions of social and cultural history, this chapter also provides most of the qualitative source material which, in turn, supports the more economic arguments of Chapters Two and Four. I weave a broad range and substantial volume of source material together to demonstrate the pervasiveness of sugar across the Atlantic world. Such widespread availability suggests that the desire for sweetness led ordinary consumers to participate in a global marketplace much earlier.

While Chapter Three considers the consuming environments of England and North America together, in Chapter Four, I turn to New England specifically. I show sugar to be deeply embedded in the local marketplace. I look in particular at the ways in which the labour of ordinary women facilitated and enabled the sugar trade in the colony. I argue that a 'capitalist energy' emanated from the colony even at this early date. Women's work provided a vital link in the chain of sugar consumption. Women produced goods for the market to exchange

for sugar and they then transformed this sugar from a raw commodity into palatable dishes. I argue that such labour was integral to the shaping of the New England mercantile enterprise and the integration of the economy into the transatlantic market. At the same time, however, when women traded the products of their domestic industry for the imported commodities, they did so in informal and non-commercial ways. Therefore, through sugar, we can recognise and delineate the distinctive character of the seventeenth-century New England economy. Even as commercial transatlantic markets opened, vestiges of non-commercial forms of exchange persisted. The chapter consequently examines the precise interface of the transatlantic market and informal networks of exchange. It is in Chapter Four, furthermore, where I focus most intently on the interplay of biology and economic infrastructure. Consumer desire needs to be synthetized with a study of economic systems. The human body's predisposition explains *why* sugar was desirable; looking at women's labour shows *how* it was accessible.

Geographic Context and Time Period

The title of this thesis is 'Sugar in the British Atlantic World 1650-1720'. 'British' and 'Atlantic' were labile concepts during this period and therefore it is necessary to spend some time on their definitions within the scope of this thesis, as well justifying the choice of chronological range for the study. The majority of my investigation focuses on the second half of the seventeenth century, as this was the period when I argue sugar consumption really accelerated. I make briefer forays into the eighteenth century, mostly for comparison or to indicate how trends developed.

As this thesis focuses on time periods before and after 1707, and the Acts of Union between Scotland and England, there is scope for some confusion between England/English and Britain/British. The geographic area under consideration comprises the land at the edge of the Atlantic Ocean which was governed by the Navigation Acts: a long series of English laws that regulated English ships, shipping, trade, and commerce between other countries and with its own colonies. In *Image I*, I have highlighted in red the location of all overseas possessions by 1700 and the thesis focuses on the consumers in north eastern seaboard of North America, and in mainland England. The sugar itself predominantly came from the West Indian Islands.

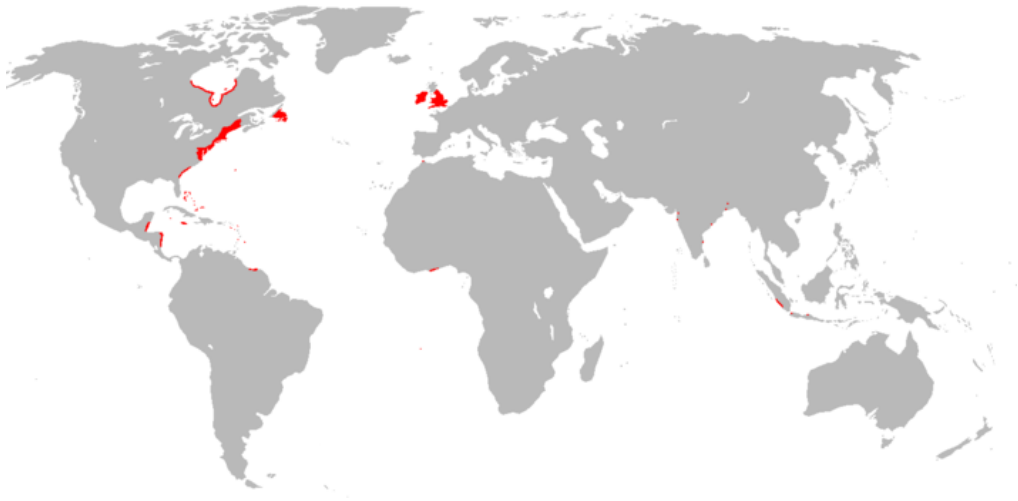

Image I Britain and British Overseas Colonies by 1700

On the eastern shores of the Atlantic, I look chiefly at consumers in England both before and after 1707. At certain points, I turn to the wider British Isles but explain explicitly when I do so. The growth of urban environments in England during this time was important for the spread of sugar, helping to create the ideal circumstances for increasing demand. Urbanization encouraged a greater number of amenities such as shops and eating establishments, and town and cities were home to increasing numbers of wage labourers wanting to purchase their food. The importance of London, a centre of international trade filled with active high-wage consumers, to sugar should be recognized here.[6] Londoners constituted c.11.5% of the population of England by 1700, over double that of a century earlier and living in a major port city, they were prodigious consumers of sugar.[7] Urbanization, moreover, increased across the entirety of England over the period. After 1670, smaller towns' relative growth was at least as rapid as that of London. As E. A. Wrigley has shown 'smaller urban centers were now increasing far faster than the country as a whole. Their population more than doubled during the century, a rate of growth more than four times

[6] In Chapter Two, I look further at the importance of London working on Robert Allen's work which demonstrates the growth of the London population to be vital for consumption trends. See Robert C. Allen, *The British Industrial Revolution in a Global Perspective* (Cambridge, Cambridge University Press, 2009) p. 87, and Chapter Two pp. 95-96.

[7] Thomas Tryon noted in 1698 that it was 'tradesmen and the artificiers', with their high wages who were able to consume the greatest amount number of imported delicacies. It was they who were the most 'abundant consumers' of 'sugar, spices, Spanish fruits, tobacco, and wines too' and their increasing consumption had 'of late years mightily encouraged Importation and Exportation' to the benefit of the English economy. Thomas Tryon, *Some general considerations offered, relating to our present trade. And intended for its help and improvement* (London, 1698) p. 10.

that of the national aggregate'.[8] But sugar also penetrated even rural areas of the country – and this thesis also aims to show the ways in which sugar spread outside major metropolitan areas. Sugar was available in isolated rural grocers' stores. The role of urbanization in expanding demand was backed up by the underlying (though inconsistent) growth of population as a whole. Wrigley and Schofield estimate total population to be 5.3 million in 1651 and 5.5 million by 1721 – put simply more potential consumers of sugar were being born. The price of sugar was also falling in England – by almost 50% from 1650-1700.[9] While this thesis seeks to move beyond price as the sole motivation for consumption, the decline in sugar prices over the latter half of the seventeenth century further supports the hypothesis that sugar was being eaten by a wider range of people earlier - sugar was more affordable to more consumers.

When discussing North American consumption, the geographic scope of this study covers the early British colonies on the north-eastern seaboard, crossing New England and the mid-Atlantic regions. Following John J. McCusker and Russell R. Menard in *The Economy of British America 1607–1789*, when discussing North America, I refer to 'British North America' for consistency.[10] I apply the same logic when referring to the 'British Atlantic'. British North America changed dramatically over the period under consideration – increasing in size and levels of development. At the turn of the eighteenth century, the English had colonized an unbroken strip of land down the coast from Maine to South Carolina. These colonies were therefore well situated to profit from intra-colonial sea trade either within the North American mainland or with the Caribbean Islands. By 1700, thousands of people had emigrated from across the British Isles to America. In the official records of the population, 89% of a population of 250 888, were white British people.[11] Immigrants brought a taste for sugar with them, as well the good itself. As early as 1634, in a treatise advising English emigrants on the trip across the Atlantic, William Wood recommended that families bring sugar to consume on their journey as well as a store of sugar for use after arrival. Sugar was

[8] E. A Wrigley, 'Urban Growth and Agricultural Change: England and the Continent in the Early Modern Period', *The Journal of Interdisciplinary History,* 15:4 (1985). p.690.
[9] Jeremy Boulton, 'Food Prices and the Standard of Living in London in the "Century of Revolution", 1580-1700', *The Economic History Review,* 53: 3 (2000). p. 488. I discuss prices in more detail in Chapter One pp. 46-47.
[10] John J. McCusker and Russell R. Menard*, The Economy of British America, 1607-1789* (Chapel Hill, Published for the Institute of Early American History and Culture by the University of North Carolina Press, 1985).
[11] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.

first on his list of essential 'grocery wares.' He also recommended that those 'as have ability' bring conserves or jams with them.[12]

European colonies were not as urbanized, but there were clear commercial centres and as in England, inhabitants of these areas had greater access to sugar via amenities including shops and eating establishments. The majority of the source material for the thesis comes from the Boston area which has more detailed and comprehensive records, partly as a result of being well-established by the mid-century. The Massachusetts Bay Colony was founded in 1630 for example, and kept extensive legislative documentation. My investigations also spread south to Philadelphia and eastern New Jersey. Founded later, these have less consistent but still important source material. Philadelphia was founded in 1682 as the capital of the Pennsylvania Colony. New Jersey came under British rule after the Dutch surrender of Fort Amsterdam in 1664. As within England, however, I will also show that sugar travelled beyond town centres and ports in North America into the rural hinterlands.[13]

As in England, the population of British America grew, creating more consumers. The US Bureau for Statistics has estimated population figures for the colonial period and these appear in other scholarship on British America, such as that by John J. McCusker and Russell R. Menard and Carole Shammas. They are not as lengthy or as detailed as those compiled by Wrigley and Schofield but are given in averages for each decade. These figures are at best an estimation as the authors admit that the number of African Americans documented for this period is 'undoubtedly too low'.[14] Native Americans, moreover, are not counted at all. They do, however, show explosive growth during the time period covered by the thesis – on account of the influx of British settlers mentioned above. In 1650, the population of the British colonies is estimated to have been 50 368 rising to 466 185 by 1720. Massachusetts

[12] William Wood, *New England's Prospect: A true, lively, and experimentall description of that part of America, commonly called New England: discovering the state of that Countrie, both as it stands to our new-come English Planters; and to the old Native Inhabitants* (London, 1634) p. 71.
[13] England's, and then Britain's, colonizing projects extended much further than the locations covered in the space of this thesis – and were also commercial. Significant work by Emma Hart and others has emphasized the marketplaces of the Carolinas, while Peter Mancall has detailed the penetration of commerce further inland. See Emma Hart, *Trading Spaces: The Colonial Marketplace and the Foundations of American Capitalism* (Chicago, University of Chicago Press, 2019) and Peter Mancall, *Valley of Opportunity: Economic Culture along the Upper Susquehanna* (Ithaca, Cornell University Press, 1991).
[14] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.

accounted for the greatest number of inhabitants – over a quarter of the total population of the British colonies in 1650, dropping to a still substantial 20% in 1720.[15]

Biological Predisposition

Biology is emphasised most explicitly in Chapter Four, but human beings' propensity for sugar is fundamental to the entirety of this investigation. For the remainder of this introductory chapter, therefore, I analyse the concept of sweetness and a 'sweet tooth' in detail. Humans have a biological predisposition for sweetness. We actively seek it out. Recognising this simple point has significant repercussions for how we conceptualise the development of the sugar trade in the seventeenth century. Consumer demand is located front and centre. We see that there was a willing and eager, indeed, greedy market for the good. The secure consumer base enabled the trade and supported the number of subsidiary industries and ventures which grew up around it, whether the coal, copper and coopering trades (as shown in Chapter Two), or mercantile ventures and women's domestic production for the market (Chapter Four).

Michelle Craig Mcdonald has described recent commodity studies as 'hybrids of history, economics, social geography, material culture, and cultural studies'. She explains that such studies 'ask where goods travelled, how they moved, in what quantities, who wanted them and, most elusive of all, why were they desirable'.[16] As already indicated, this thesis asks all of these questions at some point. In the next section of this Introduction, I tackle this last and 'most elusive' characteristic, using human biological evidence to show why and how sugar is desirable.

Hedonic hotspots: the human brain on sugar

The human body's response to sweetness and why we should understand it as an intoxicating substance

In recent years, public opinion has turned against sugar. It is now commonly understood that the sugar industry long downplayed the deleterious health effects of over-consumption of

[15] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.
[16] Michelle Craig Mcdonald, 'Transatlantic Consumption' in Frank Trentemann (ed.), *The Oxford Handbook of the History of Consumption* (Oxford, Oxford University Press, 2012) p. 120.

sugar. Indeed, as early as the 1960s, industry professionals shifted the 'blame' for cardiovascular problems, obesity and diabetes onto fat. They ignored or supressed any scientific investigations into the negative effects of sugar.[17] The realisation that over-consumption of sugar is, in fact, linked to a range of health problems has led to a radical overhaul of public perception of the good.[18] In 2016, Public Health England challenged the food and hospitality industry to reduce the amount of sugar in foods by 20%.[19] In 2018, the Soft Drinks Industry Levy known as the 'Sugar Tax' came into effect which encouraged a reduction of the amount of sugar in sugar-sweetened beverages.[20] Brands themselves have also independently pledged to reduce the sugar in their foods. Nestle promised that by the end of 2020, they would reduce the amount of sugar in their food and drinks by 5%.[21] A group of confectionery companies, including Mars Wrigley, Ferrero, and Russell Stover, announced that, by 2022, half of their single-serving products will contain at most 200 calories per pack thanks to a reduction in sugar.[22]

Most of these initiatives stem from a better and deeper understanding of what precisely sugar does to the human body. As the sugar industry has loosened its grip on the scientific community, there has been a substantial uptick in scientific investigation into just how sugar affects us both psychologically and physiologically. Complementing the historical findings of this thesis, the studies demonstrate just how positively the human body and brain responds to sugar, and how we are biologically hard-wired to consume more and more of it.

[17] Cristin E. Kearns, Dorie Apollonio, Stanton A. Glantz, 'Sugar Industry Sponsorship of Germ-Free Rodent Studies Linking Sucrose to Hyperlipidemia and Cancer: An Historical Analysis of Internal Documents', *PLOS Biology,* 15:11 (2017) and Cristin E. Kearns, Laura A. Schmidt, Stanton A. Glantz, 'Sugar Industry and Coronary Heart Disease Research: A Historical Analysis of Internal Industry Documents' *JAMA Intern Med,* 176: 11 (2016).
[18] Recent surveys report that seventy per cent of Americans are concerned about the sugar in their diets, and U.K. shoppers rate sugar content as the most important factor in making healthy food choices. See: Nicola Twilley, The Race to Redesign Sugar, *The New Yorker,* Sept. 2020 issue. (https://www.newyorker.com/magazine/2020/09/28/the-race-to-redesign-sugar Accessed: Jan 2021).
[19] Public Health England Press Office, 'Third year of industry progress to reduce sugar published', October 2020. (https://www.gov.uk/government/news/third-year-of-industry-progress-to-reduce-sugar-published Accessed: Jan 2021).
[20] Public Health England Press Office, 'Soft Drinks Industry Levy comes into effect', April 2018. (https://www.gov.uk/government/news/soft-drinks-industry-levy-comes-into-effect Accessed: Jan 2021)
[21] Nestle website accessed Jan 2021: https://www.nestle.com/csv/impact/tastier-healthier/sugar-salt-fat. As of January 2021, Nestle have not revealed whether they achieved this goal.
[22] Twilley, 'The Race to Redesign Sugar'.

Introduction

It is believed among the scientific community that we evolved to seek out sugar.[23] Our primitive ancestors were scavengers; whose chief necessity was for food to be in high in calories. Before sugar-cane cultivation, human's primary sources of sweetness were honey and ripe fruit which would provide many of the nutrients, as well as the energy, essential to survival. The sweet taste indicated that the food was good to consume. In comparison, a rancid, bitter or sour taste was more likely to indicate that the food was unripe, poisonous, or rotting and therefore could cause sickness. [24]

Sweet foods are an excellent source of energy, easy to digest, and they promote higher weights, as such, early human brains adapted to respond well to them. Today, the human brain is functionally the same as our primitive ancestors, consequently, when we consume sugar, the taste receptors in our bodies send the same signals to our brain. These receptors are not just in our mouths but are found all throughout the human body. Researchers have found them in the intestinal tract, the central nervous system, the skin and even the lungs. Our entire bodies are primed to register sugar.[25]

Consuming sugar, therefore, activates the 'mesolimbic dopamine system', which is the brain's reward system. The taste receptors initiate the secretion of dopamine on encountering sugar. When dopamine is released, we register that an event was a positive experience. Sugar, therefore, activates our brains 'hedonic hotspots'. Put simply: we feel good when we eat sugar. Our bodies also react in other ways to indicate enjoyment. Watching humans consume sugar, scientists have noticed an increased heart rate, which is initiated at the first taste of sugar not just when the carbohydrates enter the bloodstream. Furthermore, consumption of sweet food is also correlated with a slowed sucking rate and increased swallowing which indicates a savouring of the sweet taste.[26]

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[23] David A. Wiss, Nicole Avena and Pedro Rada, 'Sugar Addiction: From Evolution to Revolution', *Frontiers in Psychiatry*, 9:545 (2018) p. 2.

[24] Amy Reichelt, 'Your Brain on Sugar: What the Science Actually Says', *The Conversation* (https://theconversation.com/your-brain-on-sugar-what-the-science-actually-says-126581 Accessed: Jan 2021) The taste sensors in our mouths have evolved along these lines. We can detect bitterness with concentrations as low as a few parts per million as this might cause danger, but we are much less sensitive to sugar. Our sweet receptors are not nearly as effective, it takes almost a spoonful of sugar to make a glass of water to taste sweet. See Twilley, 'The Race to Redesign Sugar'.

[25] Twilley, 'The Race to Redesign Sugar'. Although different cultures consume sugar differently, and in different volumes, all populations crave it. Claude Marcel Hladik and Bruno Simmen, 'Primate Models for Taste and Food Preferences', *Evolutionary Anthropology,* 5 (1996) p. 62.

[26] Lewis P. Lipsitt, 'Taste in Human Neonates: Its Effect on Sucking and Heart Rate', in James M. Weiffenbach (ed.), *Taste and Development: The Genesis of Sweet Preference* (DHEW Publication No. 77-1068, 1977) pp. 125-142.

We also want to repeat the experience of consumption. The release of dopamine in the brain reinforces behaviours and encourages recurrence. As one scientist has put it, 'dopamine "hits" from eating sugar promote rapid learning to preferentially find more of these foods'.[27] The brain, moreover, is plastic, and it re-wires itself in response to this activity. The more sugar we consume, the higher tolerance we develop for it. Dopamine needs receptors to bind to in order for us to register feelings of well-being. As we consume more sugar, these receptors down-regulate, so that the brain does not become over-stimulated.[28] The next time we eat sugar, there are fewer dopamine receptors for the dopamine to bind to and the feeling of well-being is less powerful. We have to consume more and more sugar to produce the same level of receptors and therefore feeling. Drugs such cocaine, amphetamines and nicotine affect mesolimbic dopamine system in the same way. This is known as tolerance. Tolerance is one problem of eleven which the *Diagnostic and Statistical Manual of Mental Disorders* specifically outlines as arising from a substance abuse disorder. Although there is yet to be a conclusive study on sugar addiction in humans, a widely-cited study on sugar consumption in rats finds that the sugar generates five of the eleven problems associated with substance abuse – including cravings, tolerance and withdrawal.[29] It appears, therefore, that sugar quite probably has addictive qualities.

Food addiction is a controversial topic however. We need food, especially carbohydrates, to survive. Some scientists question whether it is possible to be addicted to a necessity.[30] Furthermore, it is clear that the human body does not become physically dependent on sugar to the point that it displays strong withdrawal symptoms when sugar is withheld – as is seen with some stimulants and narcotics. However, let's turn back to George King's joy at beholding the hogsheads of sugar in the confectioners. Whether or not it is addictive, sugar is

[27] Amy Reichelt, 'Your Brain on Sugar'.
[28] Jeffrey M. Daly and Stephen Salloway, 'Dopamine Receptors in the Human Brain', *Psychiatric Times*, 11:5 (1994). (Online version: https://www.psychiatrictimes.com/view/dopamine-receptors-human-brain Accessed Jan 2021).
[29] Nicole R. Avena, Pedro Rada, and Bartley G. Hoebel, 'Evidence for Sugar Addiction: Behavioral and Neurochemical Effects of Intermittent, Excessive Sugar Intake' *Neuroscience and Biobehavioral Reviews*, 32:1 (2008) pp. 20–39.
See also: Nicole R. Avena, Pedro Rada, and Bartley G. Hoebel, 'Sugar and Fat Bingeing Have Notable Differences in Addictive-Like Behavior', *The Journal of Nutrition*, 139:3 (2009) pp. 623–628.
[30] Johannes Hebebrand, Özgür Albayrak, Roger Adan, Jochen Antel, Carlos Dieguez, Johannes de Jong, Gareth Leng, John Menzies, Julian G. Mercer, Michelle Murphy, Geoffrey van der Plasse, Suzanne L. Dickson, '"Eating addiction", Rather than "Food Addiction", Better Captures Addictive-Like Eating Behaviour', *Neuroscience & Biobehavioral Reviews*, 47:4 (2014) pp. 295-306,

certainly psychologically rewarding – enough that we seek it out time and time again, often at the expense of other food-stuffs.[31]

Sugar alone enacts a powerful force upon the human body. When it is combined with fat this force is even stronger. Fatty foods stimulate the dopamine system in the same way as sugar. When sugar and fat are consumed *together* the brain is doubly stimulated.[32] Sugary fatty foods are known as 'highly palatable', meaning that they are what we find most delicious. This, in some ways, is obvious. Cakes, chocolate, ice cream all rank highly on a list of desirable foodstuffs although the combination of a high fat/high sugar percentage appears very rarely in the natural world. In fact, it appears just once: in breast milk. Breast milk is 3-5% fat and ~7% sugar.[33] Such a combination is necessary to encourage rapid growth in the infant. Processed foods often replicate the ratio of one part fat to two parts of sugar. Chocolate, for instance, is often 20-25% fat and 40-50% sugar. However, while the combination is vital to a baby's early survival, in later life, it encourages over-eating arising from 'hedonic hunger'. 'Hedonic hunger' was a term coined by clinical psychologist Michael Lowe in 2007 to express the phenomenon of appetite which stemmed not from a calorie deficit, but from emotional cravings.[34] A recent study published in *Cell Metabolism* demonstrate quite how powerful the combination of fat and sugar is. The authors label palatable sugar-fatty foods as 'supra-addictive'. The participants in their study were willing to pay more for foods where fat and sugar were combined than when they were on their own as the psychological rewards would be greater.[35]

While many of these studies are expressly concerned with the over-eating habits of twenty-first century consumers, the findings are useful for understanding the consumption patterns of early consumers. In the following chapters, I consider the consumption habits of consumers

[31] David A. Wiss, Nicole Avena and Pedro Rada, 'Sugar Addiction: From Evolution to Revolution', p. 6.
[32] In Chapter Four in particular, I consider the importance of the hedonic hotspots for the trade in sugar in British North America.
[33] R. Jenness, 'The Composition of Human Milk', *Semin Perinatol*, 3:3 (1979) pp. 225-39.
[34] Ferris Jabr, 'How Sugar and Far Trick the Brain into Wanting More Food. *Scientific American,* Jan 2016 Edition, (https://www.scientificamerican.com/article/how-sugar-and-fat-trick-the-brain-into-wanting-more-food/ Accessed Jan 2021).
[35] Alexandra G. Di Feliceantonio, Geraldine Coppin, Lionel Rigoux, Sharmili Edwin Thanarajah, Alain Dagher, Marc Tittgemeyer, Dana M. Small, 'Supra-Addictive Effects of Combining Fat and Carbohydrate on Food Reward', *Cell Metabolism*, 28 (2018). See also: Margaret J. Morris, Jessica E. Beilharz, Jayanthi Maniam, Amy C. Reichelt, R. Frederick Westbrook, 'Why is Obesity Such a Problem in the 21st century? The Intersection of Palatable Food, Cues and Reward Pathways, Stress, and Cognition', *Neuroscience & Biobehavioral Reviews*, 58:4 (2015) pp. 36-45.

of sugar right at the beginning of the sugar trade with Caribbean plantations. Plantation agriculture, in particular its use of enforced and enslaved labour meant that production of sugar rose substantially over the course of the seventeenth century. Understanding the profound physiological and psychological effects of sugar helps to explain why this trade was able to accelerate at the pace and volume that it did. Domestic consumers acted on a biological imperative to access the good, and to seek it out at market time and time again.

Chapter One – An Introduction to Sugar in the Early British Atlantic

Contents

Section I Introduction

I.i William Plasse and Ann Houghton

On what was probably a cold and brisk winter's day in Salem, Massachusetts, during February 1646, a certain William Plasse died. Plasse was a blacksmith who had fallen on hard times, and who, up to his death had been staying at the house of Thomas Weekes. In the weeks leading up to his demise, he had succumbed to a sickness and needed to be taken care of. Weekes gave Plasse food, drink and a bed as well as spending money to clothe and shoe him, but it was not enough to save him. On 20th February, Plasse's will and probate was proved by the Quarterly Court of Salem. The document's mention of an anvil and bellows reveals Plasse's profession. It also indicates that he was no longer working, as he was being looked after with funds from 'the town' at the time of his death.[1]

While he was tending to the sick blacksmith, Weekes kept a record of his expenses, not wanting to be out of pocket from the labour. Plasse, or the town, owed Weekes for his attendance on the sick blacksmith. This included the food and drink Weekes provided for the patient and thus we have a sense of the kind of diet to which a man like Plasse would be accustomed. Weekes spent a total of 13s 10d on Plasse's food during the latter's illness, which comprised 'veal & fowle, sugar, Bread, beare, eggs and spices'.[2] We know little more about Plasse: he was a seemingly ordinary man into whose life a probate account gives us only small insight. But this small snapshot is illuminating in its ordinariness. In particular, it sheds light on the common dietary habits of a Massachusetts blacksmith. Even as early as 1646, a poor ordinary townsperson in North America could expect to consume sugar.[3]

Nineteen years later, and around 3500 miles away, on what could have been quite possibly a similarly chilly winter's day, in January 1665, in Chesterfield, Derbyshire, England, Ann Houghton, an apprentice to the grocer William Milnes, was brought before a judge during the quarter sessions. She was charged with theft. According to the court record, she admitted that

[1] George Francis Dow (ed.), *The Probate Records of Essex Country, Massachusetts,* Vol. 1. (Salem, Essex Institute, 1916) p. 49.
[2] Dow, *The Probate Records of Essex Country,* I, p. 49. The will also shows that in the two weeks before his illness, Plasse was also living at Weekes' house and his board cost 9s though it is unclear the duration of Plasse's earlier stay.
[3] Plasse may have been consuming sugar precisely because he was sick. While we know sugar as a sweetener now, in the mid-17th century and before, the good was thought to have important medicinal properties. Although, the richness of his diet besides sugar does not suggest a man on an invalid's diet. I explore sugar's role a medicine in greater detail in Chapter Three.

she had given Isabel, the wife of Roger Mumsell 'the quantity of halfe a pound of powder sugar at one time and about two pounds worth another time'. Ann had stolen the sugar from her master's shop and given it to Isabel in exchange for 'dressing her masters house, which she should have done herself'.[4] The apprentice of a grocer, Ann had access to desirable items, like powder sugar, which she could pilfer and use to pay others, like Isabel, for work she did not want to do herself. Until she was found out, this was probably a nice little side business. She also allegedly stole hops, currants and spices to pay off other women in the neighbourhood. Unfortunately for Ann, she was found out. Fortunately for us, it was recorded. Ann's brief run-in with the law opens our eyes to another vital piece of information. While the record does not go as far as to describe the final use of the sugar, and by whom it was eventually consumed, it does indicate that powder sugar was available in a local rural grocery in England in 1665 – so much of it, indeed, that Ann could steal up to two pounds and believe it would go unnoticed.

Ann's and William's appearances in legal records, brief though both may have been, and unrelated though they might seem, become extremely interesting when read together. They suggest that sugar was widely available to non-elites, across a wide geographical area, as early as the mid-seventeenth century. Consequently, they demand a re-evaluation of the chronology and development of the sugar trade and sugar consumption across the British Atlantic world during the seventeenth century.

This DPhil thesis provides such a re-evaluation. It is an investigation into how people produced, bought, and ate sugar across the British Atlantic world from around 1650. It argues that by 1700, sugar was one of the most important commodities in Europe and North America. Most significantly, it shows that more people were consuming sugar earlier, and it explores the ways in which sugar came to be eaten by members of almost all classes. Fundamentally, it seeks to understand how sugar became ubiquitous across the socio-economic hierarchy, and what the consequences of such increasing consumption were for the Atlantic economy.

This chapter serves both as an extended introduction to the thesis and as a literature review, setting the content and arguments of the dissertation in their several contexts. In *Section I.ii*, I

[4] DRO Q/SB/2/260.

outline the parameters of my research and in *Section I.iii*, I introduce the geographical scope. In *Section I.iv,* I present some of its repercussions. In *Sections I.v* and *I.vi*, I give an overview of the sugar trade up to 1650 (when the time period treated by the thesis begins). In *Section II*, I introduce the key themes which this thesis revisits during the subsequent chapters and I summarize some of the literature which has dealt with these thus far. I give an outline of the scholarship on the British Atlantic production of sugar and scholarship on its consumption. Such a historiographical introduction is necessary to fully situate the novel and exciting findings of the research which support the chief argument that sugar consumption was more widespread earlier than we have recognized. In *Section III*, I explore and analyse early consumption in more detail by looking at visual depictions of sugar. *Section IV* explains how the thesis's novel contributions in its exploration of new source material and its use of a new geography. I bring all of these sections, and their ideas, together in the conclusion: *Section V*.

I.ii Outline of Research

I am not the first to tackle the subject of the spread of sugar. Indeed, it is a story that is well-rehearsed. It is often employed as an example of the democratizing power of the market – prices fall, demand grows and thus goods trickle down through the socio-economic hierarchy.[5] In this narrative, sugar begins life as an elite substance, too expensive and rare to be consumed by anyone else beyond the crème-de-la-crème of society. It graced the tables of emperors and nobles, was sent as gifts by the Florentine Bankers, the Medici, and gave Queen Elizabeth I her famous blackened teeth.[6] Non-elites made do with honey, or even a diet devoid of sweetness. However, with the rise of plantation slavery and efficiency gains in production, the price of sugar fell. Comparative cheapness is what allowed the good to spread and become an object of mass-consumption. In most accounts, this story is an eighteenth and nineteenth-century one.[7] By 1800, once it had dropped far enough in price,

[5] See, for example, scholarship on working peoples' diets: D.J. Oddy and D.S. Miller, *The Making of the Modern British Diet* (London, Croon Helm, 1976) and John Burnett's *Plenty and Want: A Social History of Food in England from 1815 to the Present Day* (London, Scholar Press, 1989).
[6] Katherine J. Watson, 'Sugar Sculpture for the Grand Ducal Wedding from the Giambologna Workshop', *Connoisseur,* 189 (1978) p. 23; Sidney Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, Penguin Books, 1985) p. 134; and Paul Hentzner (trans. R. Bentley), *Paul Hentzner's Travels in England, During the Reign of Queen Elizabeth* (London, Edward Jeffery, 1797) p. 34.
[7] Craig Muldrew was struck by the amount of sugar the eighteenth century yeoman farmer Richard Latham is able to purchase 'given his low-level of expenditure'. While David Meredith and Deborah Oxley only class sugar as a 'major food item' in 1841. (Craig Muldrew, *Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780* (Cambridge, Cambridge University Press, 2011) p. 56 and David Meredith and Deborah Oxley, 'Food and Fodder: Feeding England 1700-1900', *Past and Present,* 222:1 (2014) p. 203).

sugar graced almost every table and was stirred into every servant's cup of tea. John Burnett, in *Plenty and Want: A Social History of Food in England from 1815 to the Present Da*y, puts annual consumption in 1801 at 30.6 lb per person.[8] By 1850, the British Navy provided its sailors with 1.5 oz. of sugar every two weeks.[9]

However, let's turn again to Ann and William – a lowly grocer's apprentice charged with theft during the quarter sessions in 1665 and a sickened blacksmith, who drew his last breath in 1646. Their experience casts a different light on this conventional narrative. Consumers like Ann and William should not have had access to that much sugar by most accounts – not for another 50 years or so at least. So, how did they? In this thesis, I pull early consumer desire to the forefront and add more archival weight to the literature that argues for more precocious consumption of the good. Looking at the consumption patterns of people like Ann and William across England and British North America, I demonstrate that sugar was consumed, in a greater variety of ways than previously acknowledged, by people across the socio-economic spectrum, throughout the British Atlantic World from the very beginnings of the English trade with the West Indies in the seventeenth century.

I seek to nuance the relationship between supply and demand. By drawing on trade statistics I show more sugar was coming into the country in the seventeenth century, and therefore logically more sugar was being consumed. Combining qualitative and quantitative analysis, I draw on a wide range of new archival sources to trace the development of the early taste for sweetness. I show that sugar consumption was pervasive much earlier on. Rather than being limited to the tables of the elite, seventeenth century sugar was a heterogeneous good, available in a number of different forms and at a number of different price points, and found in the diets of consumers covering a wide demographic range. Sugar was a key part of the servants' diets at Chatsworth House in Derbyshire and it paid the wages of farm labourers in New Jersey. It provided Harvard students with a medium of exchange to pay their fees. London tradespeople lapped it up in the form of jams and preserved fruits, Boston grocers sold gingerbread, and apothecaries on both sides of the Atlantic used sugary syrup as a vehicle for their medicaments.

[8] John Burnett, *Plenty and Want*, p. 15.
[9] John B. Hattendorf, *British Naval Documents, 1204-1960* (Aldershot, Scholar Press for the Navy Records Society, 1993) pp. 655-57.

!.iv Implications and Repercussions: Importance for the History of Atlantic World Capitalism and contribution to the Williams thesis

The implications of this new research are manifold. Sugar, and consumer demand for sugar, drove change and development in the Atlantic economy as a whole. As well as providing a clearer timeline for widespread sugar consumption, the research gives insight into the development of international trading networks, the commercialisation of the British Atlantic economy, early industrial activity and, underneath it all, the reliance of the metropolitan environment on exploitation in the colonies.

Studies of one commodity have proved particularly useful for understanding both capitalism and empire and, in this way, the thesis continues in the vein of commodity histories that have come before it. By tracing one good, these studies open up an understanding of wider economic phenomena across the world. This good becomes a lens through which we can understand the social, political and economic worlds with renewed freshness. As mentioned in the Introduction, Sidney Mintz's *Sweetness and Power: The Place of Sugar in Modern History*, which traces the rise of sugar consumption in England, is often considered both the originator and the archetype of the genre.[10] In *Sweetness and Power*, Mintz forcefully asserts that sugar consumption, the sugar industry, and slavery were inextricably bound up with Britain's economic development as an industrial capitalist society. The thesis is in accord with Mintz in emphasizing that sugar consumption, capitalism and exploitation were intertwined and that ordinary consumers were integral to these phenomena. By drawing on a wider variety of sources and a wider geographical area, the thesis aims to contribute to Mintz's influential work.

More recent examples of commodity histories which inform how I have constructed my argument here include Erika Rappaport's *A Thirst for Empire: How Tea Shaped the Modern World* and Sven Beckert's *Empire of Cotton: A New History of Global Capitalism.* [11] Rappaport shows how the tea industry, which spread across Europe, Asia, North America, and Africa, transformed global tastes and habits. Inseparable from imperial ambition, like sugar, tea was also foundational to contemporary habits of mass consumption. *Empire of Cotton* offers an argument for how the backward and forward linkages created by the global

[10] Sidney Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, Penguin, 1985).
[11] Erika Rappaport, *A Thirst for Empire: How Tea Shaped the Modern World* (Princeton, Princeton University Press, 2017).

cotton industry in the nineteenth century were integral to the development of a global capitalist economic system. Woven through Beckert's text is compassion for the enslaved labour which he suggests enabled this transformation and which he develops into a new version of the painful argument that without slavery, there would have been no industrial revolution.[12] In this thesis, I bring some of Beckert's claims about the cotton trade to the history of early British Atlantic sugar production and consumption. Beckert argues, for example, that the ability of the capitalists in charge of the cotton industry to harness the productive capacity of the 'global countryside' in order to furnish the mills in Northern England was fundamental to eighteenth and nineteenth century economic growth. [13] This thesis explores how the demand for sugar in the Atlantic world during the seventeenth-century facilitated similar backword and forward linkages and thus set an earlier model for the relationship between the 'global countryside' and the British Isles described by Beckert.

By considering English and British North American sugar trade and consumption together, and drawing on Beckert's approaches, this thesis argues that English and then British economic development was deeply intertwined with empire, in particular, with commercial trade with the colonies, colonial extraction and the Atlantic slave trade. In making these arguments, it develops modern interpretations of arguments advanced by Eric Williams in *Capitalism and Slavery*.[14] Since the publication of Williams' ground-breaking work in 1944, scholars have continued to explore the importance of slavery to the British industrial revolution and to British economic growth. Read narrowly, William's thesis asserts that the profits generated by the slave trade were the main source of finance for the Industrial Revolution, an argument that has not stood up well to the test of time and economic historians' subsequent research.[15] However, reading Williams more generously opens myriad additional linkages and connections between slavery and industrialization. These broader claims of his work have influenced generations of subsequent scholarship. This body of literature has shown how slavery facilitated the development of long-distance trade networks; increasing commercialization; investment in infrastructure, as well as early forms of industrial activity. It argues that the rise of British Atlantic trading was instrumental to

[12] Sven Beckert, *Empire of Cotton: A New History of Global Capitalism* (London, Allen Lane, 2014).
[13] Beckert, *Empire of Cotton*, p. 98.
[14] Eric Williams, *Capitalism and Slavery*, Third Edition (Chapel Hill, University of North Carolina Press, 2021)
[15] See for example: David Eltis and Stanley L. Engerman, 'The Importance of Slavery and the Slave Trade to Industrializing Britain,' *The Journal of Economic History*, 60 (2000) pp. 123–144.

economic and structural change which in turn led to industrialisation and sustained economic growth.

Joseph Inikori, for example, has provided quantitative estimates of the links between African labour, the plantation system and the development of the British economy. He argued for a trade-based explanation of the industrial revolution and demonstrated the importance of Atlantic ports and export markets for innovation in eighteenth- and nineteenth- century cotton manufacturing.[16] He also asserted that England had the earliest success with import substitution, import substitution industrialisation and re-export substitution industrialisation.[17] To borrow from Pat Hudson's description of these phenomena: 'Import substitution refers to a system of protective tariffs against imports that compete with domestic manufactures and the conscious encouragement of home industries that make the same sorts of goods. Import substitution industrialisation occurs when protected home industries begin to compete strongly enough with imports that they capture from their rivals not only the domestic market but also other markets overseas, making protectionism no longer necessary. Re-export substitution industrialisation similarly occurs when, with the initial assistance of protective tariffs, home manufacturing is able to capture external markets formerly supplied by re-exports'.[18] Inikori's arguments about the success of such processes mainly apply to the later cotton trade, however when looking at sugar we can identify early iterations of these processes. Protective tariffs encouraged the domestic sugar refining industry and protected the domestic market for sugar from foreign competition.

Nuala Zahedieh, in turn, places emphasis on the innovative nature of merchant capitalism, to which slavery was integral, for British economic growth. Specifically, she has analysed the acceleration of mercantile activity in London during the second half of the seventeenth century, and argued for the importance of the capital city's role as a commercial hub of Empire. London-based merchants co-ordinated an increasingly complex Atlantic economy and created conditions which 'underpinned the long-run period of structural change and

[16] Joseph Inikori, *Africans and the Industrial Revolution in England* (Cambridge, Cambridge University Press, 2002).
[17] For an in-depth explanation of these phenomena see Inikori, *Africans and the Industrial Revolution*, pp. 150–5, 406–11, 432–3, 482–5.
[18] Pat Hudson, 'Slavery, the slave trade and economic growth: a contribution to the debate' in Catherine Hall, Nicholas Draper, Keith McClelland (eds.), *Emancipation and the remaking of the British Imperial World* (Manchester, Manchester University Press, 2015) p. 42.

economic growth which culminated in the Industrial Revolution'.[19] She has also traced the development of the copper industry in England which linked a supply network covering Cornwall, South Wales, Bristol and London to enslaved Africans in the Caribbean.[20] Building directly on William's analysis of seven different industries which benefited from Caribbean demand, she has shown how the growth of the copper industry in response to increasing Caribbean trade 'impacted investment and innovation in the broader economy'.[21] Sugar refining was another of the industries Williams identified, however he limited his discussion to the eighteenth century.[22] In this thesis, I build from Zahedieh's and Williams' approaches to analyse the importance of sugar refining for the wider economy in the seventeenth century.

Catherine Hall, Nick Draper and Keith McClelland's extensive project *Legacies of British Slave-Ownership* (LBS) analysed the many and diverse influences of slavery and the slave trade on Britain. One aspect of their investigation was to follow the evolution of firms and individuals who received slave compensation after abolition, and to trace the redeployment of slave-based wealth. As of 2022, the project is ongoing and it looks beyond the commercial to consider the role of enslavers as intellectual, imperial and political actors who influenced the wider cultural climate of Britain.[23] Influenced by this approach, in this study of sugar consumption, I consider how slave-produced sugar influenced the cultural and culinary habits of the metropole.

Recently, Maxine Berg and Pat Hudson have also summarized the importance of the economic stimulus of British imperial and colonial endeavours.[24] Although their focus is on the colonial demand for manufactures, like Inikori, they highlight the 'product and process revolutions' which took place in Atlantic ports as a result of colonial trade such as the

[19] Nuala Zahedieh, *The Capital and the Colonies* (Cambridge, Cambridge University Press, 2010), *front matter.*
[20] Nuala Zahedieh, 'Nuala Zahedieh, 'Eric Williams and William Forbes: Copper, colonial markets and commercial capitalism', *The Economic History Review*, 74:3 (2021) and 'Colonies, Copper, and the Market for Inventive Activity in England and Wales, 1680-1730', *The Economic History Review*, 66:3 (2013).
[21] Zahedieh, 'Eric Williams and William Forbes', p. 786.
[22] Williams, *Capitalism and Slavery*, pp. 56-60.
[23] See: https://www.ucl.ac.uk/lbs/ . The project also produced two books: Catherine Hall, Nicholas Draper, Keith McClelland (eds.), *Emancipation and the remaking of the British Imperial World* (Manchester, Manchester University Press, 2015) and Catherine Hall, Nicholas Draper, Keith McClelland, Katie Donington, and Rachel Lang, *Legacies of British Slave-Ownership: Colonial Slavery and the Formation of Victorian Britain* (Cambridge, Cambridge University Press, 2014). See also: Nicholas Draper, *The Price of Emancipation: Slave-ownership, Compensation and British society at the End of Slavery* (Cambridge, Cambridge University Press, 2010).
[24] Maxine Berg and Pat Hudson, 'Slavery, Atlantic trade and skills: a response to Mokyr's "Holy Land of Industrialism"', *Journal of the British Academy*, 9 (2021) p. 270.

innovations in textile production in response to the fashion demand in West Africa and the Americas.[25] These innovations were important for the development of British industrial activity. The authors also insist on the importance of Atlantic trade to the shifting geography of industrialisation. Atlantic markets moved the growth centres of the economy away from London to the west facing regions of the Midlands, Lancashire and Yorkshire – what were to become industrial heartlands.[26] In a similar vein, Pat Hudson, in a separate essay for an LBS volume, argued for the influence of slavery on the development of financial and credit systems in the later eighteenth and early nineteenth centuries. Looking especially at bills of exchange used by industrialists in Northern England, Hudson showed how bills of exchange that originated out of the slave trade integrated London and provincial money markets, and allowed easy credit to circulate in major manufacturing areas, thus facilitating industrial activity.[27]

Hudson insists that 'Our picture of the relationship between capitalism and slavery can be completed only by research which casts the net wider and longer chronologically, than did Williams or Inikori'.[28] This thesis follows Hudson's advice as well as building on these previous interpretations of Williams' arguments. It provides new wide-ranging archival evidence of the early sugar trade and thus adds weight to our sense that, by the seventeenth-century, commercial exchange built around colonial produce was reshaping the economic world in which the British Isles were embedded.

Sugar was at the centre of a nexus of colonialism, globalisation, consumerism, and industrialisation. As Barbara Solow has written: 'until the nineteenth century, wherever sugar and slavery went, a web of international trading flows in capital, merchandise, labour supply, and shipping was woven'.[29] Over the course of the following chapters, by looking at on-the-ground economic activity in England and British North American colonies, I explore the many ways in which the evolving sugar industry contributed to the Atlantic world economy. In the seventeenth-century slave-sugar complex, we see how exploitation of African slave labour in colonial settings was beginning to facilitate the accumulation of capital in the hands

[25] Maxine Berg and Pat Hudson, 'Slavery, Atlantic trade and skills', p. 266.
[26] Williams, *Capitalism and Slavery*, p. 73.
[27] Pat Hudson, 'Slavery, the slave trade and economic growth' *passim.*
[28] Pat Hudson, 'Slavery, the slave trade and economic growth', p. 52.
[29] Barbara Solow, 'Capitalism and Slavery in the Exceedingly Long Run', *The Journal of Interdisciplinary History,* 17:4 (1987) p. 737.

of English and North American merchants, to encourage increasing commercialisation, and to drive forward the processes of industrialization in England.

Solow argued that the volume of the sugar trade was less important than 'its precedent as an economic organization'.[30] Between the seventeenth and nineteenth centuries, the structures of a capitalist economy based on the sugar trade developed via the emergence of a relationship between extraction in the colonies, and the accumulation of capital with related commercialisation and industrialization in the centre. We can see the roots of these developments over the course of the seventeenth century, as sugar arrived in England from the Caribbean, was processed by domestic refiners and was shipped out to the rest of Europe. I argue here, particularly in Chapter Two, that the sugar trade formed an economic precedent for the relationship between the periphery and centre that was solidified in the later cotton trade. Beckert demonstrates that it was European, including British, ability to reshape global cotton networks which cemented their predominance in the trade. This came about partly through the dislocation of the site of production (the cotton field), with the site of processing (the factory) and the global partitioning of colonial extractive processes manned by slave labour from industrial productive processes manned by wage labour – just as we see in sugar.[31]

Before turning in more detail to the historiographies of production and mass-consumption (*Sections II* and *III*) which speak in more detail to the implications I describe here, we should rehearse some of the key aspects of the sugar trade. *Section I* finishes with a whistle-stop tour of sugar's pre-modern or indeed, pre-Early Modern existence.

I.v Sugar up to 1600

One important piece of context for the history of sugar trade and consumption is an understanding of the origins of the sugar industry and the nature and extent of early sugar consumption. The following paragraphs are a broad-brush account of how the cultivation and consumption of sugar spread from the earliest crops in Persia to the Caribbean by way of Europe.

[30] Barbara Solow, 'Capitalism and Slavery', p. 713.
[31] Beckert, *Empire of Cotton*, *passim* but especially pp. 96-99.

There is agreement among historians on the eastern origins of sugar production and its progress westward – and on the important distinction between references to sugar and references to the industry of sugar production.[32] Archaeological evidence suggests sugar cane originated in South Asia as early as 8000 B.C. in either Papua New Guinea or Indonesia; references to it pepper Ancient Persian and Chinese texts.[33] References to the production of sugar from cane juice, however, do not come until much later. The first sugar cane industries grew up in the Persian Gulf and it is thought they travelled there from India. Buddhist cuisine in India had adopted sugar by 260 BC.[34] It is not until about 500 A.D. that there is written evidence of sugar. The *Buddhagosa* or *Discourse on Moral Consciousness,* a Hindu religious document, describes the boiling and cooling of sugar cane juice to make a sort of toffee-like substance.[35]

In all these accounts, there is then a chronological jump to the seventh century A.D., when sugar production and consumption become far more easily traceable. As Islam moved westward, sugar travelled with it, along the familiar route also taken by rice, cotton, aubergines, watermelons, bananas, oranges and lemons.[36] These goods worked their way through Iran and Iraq, into the Jordan valley and on to the Mediterranean coast of Syria, from there spreading to Egypt and to locations in the European Mediterranean.

As Islam moved into Europe, the Christian church began a series of religious wars in the Middle East to defend religious sites. These Crusades meant a number of European soldiers travelled eastwards and in doing so came into contact with Islamic culture and food – including sugar and forms of sugar production. It is thought that sugar cane saved crusaders from starvation during the First Crusade of what is now Palestine in 1095. Having developed a taste for sweetness, some of these crusaders brought it back to England with them.[37]

When Europeans took over Islamic areas, they also took over sugar production in these locations. As was the case for so many goods, Venice became a key conduit through which

[32] Noël Deerr, *The History of Sugar* (London: Chapman and Hall, 1949), Sidney Mintz, *Sweetness and Power,* Daniel Strum, *The Sugar Trade: Brazil, Portugal, and the Netherlands (1595-1630)* (Palo Alto CA., Stanford University Press, 2012), and James Walvin, *Sugar: The World Corrupted, From Slavery to Obesity* (London, Robinson, 2017).
[33] Deerr, *The History of Sugar*, p. 35.
[34] Walvin, *Sugar: The World Corrupted,* p. 6.
[35] Mintz, *Sweetness and Power,* p. 23
[36] Walvin, *Sugar: The World Corrupted*, p. 8.
[37] Walvin, *Sugar: The World Corrupted*, p. 9.

sugar was funneled from the east to the west. Venetians, for example, took control of sugar enterprises near Tyre and on the islands of Crete, Sicily and Cyprus. Sicily had long been an important sugar producing region. Sugarcane had been produced shortly after the Muslims conquered the island in 878, and by the end of the ninth century Sicilian sugar was being sold in North Africa.[38]

It was the Portuguese, in alliance with Spain, however, who pushed the sugar industry even further west. The Iberian Peninsula was an important crossroads for sugar's spread. As William D. Phillips Jr. has noted sugar spread westwards via two distinct paths. 'The Muslim path that led from Mesopotamia to Egypt and then around the southern shore of the Mediterranean, and the Christian path that led from the Crusader states in Syria and Palestine to Cyprus and Sicily and from there to Valencia'.[39] These two paths had converged in Iberian states by the late Middle Ages. Developing this mainland industry, the Spanish and Portuguese then ventured out with sugar into the Atlantic. As they began their maritime imperial mission in the fifteenth century, the Portuguese conquered the islands of Madeira, the Azores, São Tomé and Principe, and the Canary Islands. These islands, especially São Tomé, were invaded with the express purpose of growing sugar cane. It was in these Atlantic Islands that innovations in sugar farming really took place. Indeed, by the end of the sixteenth century, these new islands had become so productive that they rendered all other, more-easterly European sources obsolete.[40] The islands were innovative across the whole industry, in cultivation, processing and shipping. The developments included new systems of irrigation and plantation design, but most significantly it was the Portuguese who began to use enslaved labour. Sugar production also began to depend on a more integrated and international economy, since the expansion required more capital than the Portuguese could provide alone. German, Italian and Dutch merchants financed the plantations while the enslaved workers came from Africa. Once it was farmed, the sugar was sent to refining centres in Antwerp and in other major European ports. With their use of the labour of enslaved people, and relatively complex financing, these Atlantic plantations were, as James Walvin puts it, the 'embryo' for the Caribbean industry which would develop 200 years later.[41] Equally, Barbara Solow

[38] William D. Phillips Jr., 'Sugar in Iberia' in Stuart Schwartz (ed.), *Tropical Babylons: Sugar and the Making of the Atlantic World* (Chapel Hill, UNC Press, 2006). p. 46.
[39] William D. Phillips Jr., 'Sugar in Iberia' p. 42.
[40] Christopher Ebert, *Between Empires: Brazilian Sugar in the Early Atlantic Economy, 1550-1630* (Leiden, Brill, 2008) p. 2.
[41] Walvin, *Sugar: The World Corrupted*, p. 9.

explains that the eventual eighteenth-century slave-sugar complex 'existed in miniature all along the route from Palestine to Crete to Madeira to the Canaries to Sao Tome to Brazil and to the Caribbean'.[42]

From these Atlantic outposts, sugar moved to Southern and Central America. We know that Christopher Columbus took sugar cane plants with him on his second Atlantic voyage in 1493.[43] From about 1516, sugar was shipped back to Europe from Spanish Santo Domingo. But it was Dutch and Portuguese traders who quickly dominated the industry, setting up in Brazil. Portugal was already well-established as Europe's chief supplier and it only increased its supremacy when it conquered Brazil and especially the city of Pernambuco. Sugar cane grew well in Brazil. Although the quality remained inferior to that grown on the Atlantic Islands, it was far cheaper and became increasingly popular with the domestic market. Commercial quantities of sugar were shipped from Brazil via Lisbon to the rest of Europe by 1526.[44] As Christopher Ebert has put it, by 1612, 'in Europe, sugar was nearly synonymous with Brazilian sugar'.[45]

Scholarship which deals with early sugar industries also attempts to give the reader a sense of early consumption. This often involves weaving together a web of anecdotes rather than any sort of systematic account. Such a spun tissue of sources gives the impression that sugar was a rare luxury, but it was consumed in large amounts by the wealthy and elite across Europe. Mintz, for example, draws on the household accounts of Isabella, Queen of Castile, accounts from Oxford University, and various printed recipe books.[46] Sugar was used not only as a sweetener but also as a spice to add flavour and in various medical treatments.

I.vi Sugar in the Early Seventeenth Century: Dutch, Portuguese, English and International Atlantic

By the end of the sixteenth century, sugar was a well-established industry in the Americas. By the seventeenth century, the West Indies became an important supplier of sugar for European and North American markets. At the same time, the English began to be more deeply involved in the industry. This was prefigured by an uptick in English sugar refining in

[42] Solow, 'Capitalism and Slavery', p. 716.
[43] Walvin, *Sugar: The World Corrupted,* p. 34.
[44] Mintz, *Sweetness and Power*, p. 33.
[45] Christopher Ebert, *Between Empires*, p. 3.
[46] Mintz, *Sweetness and Power*, *passim.*

Chapter One

London during the last fifteen years of the sixteenth century, as supply of the raw good was increased by Elizabethan privateers who looted Iberian ships. England and Spain were at war in the 1590s and there was massive investment in privateering and a surge in prize sugar imports. K. R. Andrews has recorded the number of times sugar appears as the main item in the records of prize cargos between 1589-91 and in 1598. In 69 cases sugar was the main item, out of 254 ships, more than any other good. [47]

There is extensive scholarship on the development of the Caribbean and the Atlantic economy in the seventeenth century.[48] According to these authors, the century was characterized by innovation and advancement in sugar production. In the first thirty years or so, sugar was shipped from Brazil through Lisbon and then on to England, to the benefit of the Dutch and the Portuguese. However, after a century of tumult and shifting fortunes, the English had positioned themselves as the dominant suppliers of the market and stopped relying on Brazilian sugar.

It is tempting to trace the development of the industry by tracking national stories: what were the Dutch, Portuguese, or English doing? But, as many recent studies of the Atlantic economy have shown, national and imperial identities were not fixed, nor isolated from each other, and there was particular fluidity in the Caribbean and Central America, especially during the first half of the seventeenth century. Early sugar and its trade were affected by a labile geo-political situation, and sugar's success depended as much or perhaps more on individuals and their networks, than on the home country's legislative decrees.[49]

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[47] K. R. Andrews, *Elizabethan Privateering: English Privateering During the Spanish War 1583-1603* (Cambridge, Cambridge University Press, 1964). pp. 77 & 130.

[48] Richard S. Dunn, *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624-1713* (New York, Norton, 1973), Nuala Zahedieh, *The Capital and the Colonies: London and the Atlantic economy, 1660-1700* (Cambridge, Cambridge University Press, 2010), Richard B. Sheridan, *Sugar and Slavery: An Economic History of the British West Indies, 1623-1775* (Barbados, Caribbean University Press, 1974), John J. McCusker and Russell R. Menard*, The Economy of British America, 1607-1789* (Chapel Hill, Published for the Institute of Early American History and Culture by the University of North Carolina Press, 1985), Christian J. Koot, *Empire at the Periphery: British Colonists Anglo-Dutch Trade and the Development of the British Atlantic, 1621-1713* (New York, NYU Press, 2011), and Victor Enthoven and Johannes Postma (eds.), *Riches from Atlantic Commerce: Dutch Transatlantic Trade and Commerce 1585-1817* (Leiden, Brill, 2003).

[49] For example, Christian J. Koot has examined the networks which connected North American traders, both Dutch and British, with traders across the Caribbean emphasising that local circumstances influenced imperial development. Inter-imperial relationships were vital to the development of commercial activity in the early Atlantic. (Cristian J. Koot, *Empire at the Periphery*, *passim*). Filipa Ribeiro da Silva also argues for the importance of individuals, entrepreneurial activity, and private businesses, all working across imperial lines, to the Atlantic Slave Trade. (Filipa Ribeiro da Silva, 'Crossing Empires: Portuguese, Sephardic, and Dutch Business Networks in the Atlantic Slave Trade, 1580-1674', *The Americas,* 68:1 (2011) pp. 7-32.) Lyndal Roper, in accord, sees the English State as playing a reactive than proactive role in regard to overseas

Daniel Strum has traced the intricacies of the trade's advancement in the early decades of the seventeenth century. Focusing primarily on the Dutch and Portuguese trade, he identifies some of the key factors which led to the burgeoning industry.[50] Some of these are mechanical, such as an increase in the number of sugar mills in Brazil. These were built in great haste at the end of the sixteenth century. There were 60 in 1570 and by 1630, this number had increased to 350. Technological innovation was also important. Sometime between 1608 and 1613, the three-roller or vertical mill was introduced to the market. This greatly improved the efficiency of sugar production. In the vertical mills, the gearing was far simpler; one of the rollers could be elongated and driven directly, resulting in lower power requirements. The vertical alignment also allowed the juice to flow away as it was expressed, permitting more sugar to be recovered from the processing operation. Furthermore, increasing the number of rolls from two to three meant that the canes could be passed through rolls one and two and then immediately through two and three, crushing canes at a greater pace.[51]

In the mid-century, the Dutch and the Portuguese still held control over the Atlantic trafficking of sugar. Nevertheless, these two nations did not have an easy, or consistent, relationship with one another and, ironically, their feuds are what allowed English merchants and planters to enter the sugar market. Initially, the two countries had supported each other in the occupation of Brazil. However, in 1621, the Dutch West Indian Company was founded and a twelve-year truce between Spain, Portugal and the Dutch Republic ended. Portuguese colonies in Brazil were targeted by the Dutch. In the 1630s, the Dutch took over the key sugar producing colony, Pernambuco, from the Portuguese. In order to keep the plantations running profitably, the Dutch relied on the labour of enslaved people. Between 1637 and 1641, the Dutch conquered the Portuguese slave trading forts of Elmina Castle, São Tomé and Luanda in on the West Coast of Africa and significantly increased the volume of people they trafficked.[52]

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expansion. She too, contends that individuals with private interests were more effective. (L. H. Roper, *English Interests and Overseas Expansion, 1613-1688* (Cambridge, Cambridge University Press, 2017)).

[50] Strum, *The Sugar Trade*, p. 150.

[51] John Daniels and Christian Daniels, 'The Origin of the Sugarcane Roller Mill', *Technology and Culture*, 29:3 (1988) p. 528.

[52] John Thornton, *Africa and Africans in the Making of the Atlantic World, 1400-1800* (Cambridge, Cambridge University Press, 1998) p. 64.

The importation of slaves dropped off sharply in 1645, after a revolt by the Portuguese/Brazilian planters against the Dutch authorities in Pernambuco. Although the Dutch held on for a few years, in 1656 they were obliged to withdraw entirely from Brazil. This exodus was vital to a change of fortunes in the Caribbean. It started immediately after the 1645 revolt in Pernambuco, when Dutch entrepreneurs first began to leave Brazil. At first it was just a trickle, but with the total loss of Pernambuco in 1656, the trickle became a raging river. Some returned to Europe, but others, Dutch Christians and Jews alike, fled from Pernambuco and spread across English, French, Dutch and Danish colonies, bringing their knowledge with them and shaping the developing slave plantation sugar economy. The Dutch were especially useful to the English in freighting goods to and from the English colonies during the English Civil War.[53]

However, as McCusker and Menard have outlined, the contribution of the Dutch to the early development of English sugar colonies has been greatly exaggerated in the historiography.[54] By the mid-seventeenth century, the English had long been engaging in maritime expansion, having made attempts, some more successful than others, to build an overseas empire since the 1580s. In the 1620s they set their sights on the West Indies; occupying the island of St Christopher in 1624, Barbados in 1627 and Jamaica in 1655. The English began to experiment with growing sugar in the mid-1640s. The investment in English plantations by English merchants was central to the progression of the industry in these islands, especially in Barbados. McCusker and Menard's examination of the surviving deed books in the Barbados Department of Archive 'identified seventy-five English merchants who invested in plantations on Barbados between 1640 and 1650; there are no references to Dutch merchants'.[55] The authors argue that English 'merchant capital transformed these plantations' providing the necessary equipment and adding to the acreage and labour force.[56]

[53] John J. McCusker and Russell R. Menard, 'The Sugar Industry in the Seventeenth Century' in Stuart Schwartz (ed.), *Tropical Babylons: Sugar and the Making of the Atlantic World* (Chapel Hill, UNC Press, 2006). p. 286.
[54] McCusker and Menard reference a number of contemporary primary sources emphasising the role of the Dutch including a letter to parliament from Sir Robert Harley, Chancellor and Keeper of the Great Seal of Barbados but argue that these sources exaggerate the contribution of the Dutch at the expense of the English. The authors note others with agree with them. Ernst van den Boogaart and Pieter C. Emmer assert that from the start of the sugar boom 'the English were ahead of the Dutch in bringing slaves to the Caribbean' – English capital not only invested in plantations but also financed the purchasing of enslaved people to farm the cane. McCusker and Menard, 'The Sugar Industry in the Seventeenth Century', pp. 285-287 and Ernst van den Boogaart and Pieter C. Emmer, 'The Dutch Participation in the Atlantic Slave Trade, 1596-1650' in Henry A. Gemery and Jan S. Hogendorn (eds.) *The Uncommon Market: Essays in the Economic History of the Atlantic Slave Trade* (New York, Academic Press, 1979). pp. 353-75.
[55] McCusker and Menard, 'The Sugar Industry in the Seventeenth Century', p. 286.
[56] McCusker and Menard, 'The Sugar Industry in the Seventeenth Century', p. 287.

Over the course of the following years, the English transformed their West Indian islands into sugar producing regions. The progress was not linear, nor homogenous across all islands. The shift to large-scale sugar production was fast in Barbados, but much slower in other regions.[57] Trevor Burnard writes that the 'shift to plantation agriculture in British America was surprisingly slow, except in Barbados'.[58] According to figures collected by Eltis, by the 1660s, sugar comprised 91% of Barbadian exports. In comparison, nearly 1/3rd of Jamaican exports were still non-sugar commodities in 1698-1700.[59] However, the volume of English colonial exports more than doubled between the 1660s and 1720.[60] Reliant on the primacy of Barbadian production, the English increasingly shut the Portuguese out of the European market during the period.[61] Richard Dunn has studied the development of the sugar industry on each Caribbean Island and asserts that the growth allowed Barbados and Jamaica and the Leeward Islands to supply 'close to half the sugar consumed in Western Europe' by 1700.[62] Dunn takes this figure from export figures collated by Noel Deerr. It is hard to understand precisely how Dunn made his calculation. As a result of inconsistent record keeping between countries, Deerr's figures do not provide comparable information across consistent years. Despite this, the estimates are useful for approximating the relative size of English exports in relation to other European colonies. I have reproduced Deerr's figures in the table below.

[57] Scholarship debates the merit of using the term 'sugar revolution' to describe the shift to sugar production in the Caribbean. Historians disagree on the nature and timing of the 'revolution' and often point to the slow development of production capacity in islands besides Barbados. See, in particular, B. W. Higman, 'The Sugar Revolution', *Economic History Review,* 53:2 (2000) and McCusker and Menard, 'The Sugar Industry in the Seventeenth Century', pp. 280-301. McCusker and Menard argue that the development sugar farming in Barbados was a decades long process of experimentation rather than a rapid shift – it should be labelled a 'boom' rather than a 'revolution'.

[58] Trevor Burnard, *Planters, Merchants, Slaves: Plantation Societies in British America 1650-1820* (Oxford, Oxford University Press, 2015). p. 24.

[59] David Eltis, 'New Estimates of Exports from Barbados and Jamaica, 1665-1701', *William and Mary Quarterly,* 52:4 (1995). p. 645.

[60] Add MS BL 36785 and E. B. Schumpeter (ed.), *English Overseas Trade Statistics, 1697-1818* (Oxford, Oxford University Press, 1960) p. 61.

[61] Jonathan Israel, *Dutch Primacy in World Trade 1585–1740* (New York, Oxford University Press, 1989) pp. 292-359. I develop my discussion of this point much more extensively in the following chapter.

[62] Dunn, *Sugar and Slaves*, p. 48.

Table I Reproduction of European Colonies Exports of Sugar c.1700

European Country	Colony	Date	Volume of Sugar (Tonnes)	Total*
English	Barbados	1698	13477	
		1699	8142	
		1700	12594	
	Nevis	1697-8	1057	
		1699	2952	
		1700	3094	
	Antigua	1698	2242	
		1699	4075	25818.3
		1700	2639	
	Montserrat	1697-8	1159	
		1699	891	
		1700	1486	
	Jamaica	1697-8	14572	
		1699	4367	
		1700	4708	
Portuguese	Brazil	1670	27200	
		1710	21800	
French	Guadaloupe	1674	2106	
	St Domigue and Haiti	1710	2920	
Dutch	Surinam	1700	4090	
Spanish	Cuba	17th century	~312	

*Total = sum of the average of each colony

Source: Noel Deerr, *The History of Sugar*, Vol. 1, (London, Chapman and Hall, 1949-1950). pp. 112, 123-132, 193-203, 212-218, 233-240.

From these estimates, it appears that at the turn of the eighteenth century, English production equalled, if not surpassed, that of Portuguese Brazil. Future competitors, importantly French St. Domingue, had not yet developed their production capacities. The French Caribbean would go on to supply the bulk of European sugar in the eighteenth century. However, it is with the fifty years from 1650-1700 that the majority of this thesis is concerned. In Chapter Two, I explore the significance of the volume of English production at this early point.

England did not keep sugar solely for home consumption but shipped it out to the rest of Europe. I now turn to introduce this time period in more detail, sketching out the existing historiographies of production and consumption.

Section II British West Indian Sugar after 1650

II.i Production and Consumption

During the seventeenth century, England became an established member of the Atlantic trading world. The seeds of what would become a central part of the country's economy by the eighteenth century, trade in sugar, were being sown. It is not novel to suggest that the rise of international trade contributed to the growth of the British and British North American economies during the years immediately following 1640. Previous historians have shown that maritime expansion provided a crucible for social, political and economic experimentation.[63] One of the crucial characteristics of this burgeoning trade was the rise in shipments of new groceries, such as tea, coffee, and sugar. Rising export volumes demonstrate that production of sugar took off in the British Caribbean during the seventeenth century. We need to integrate the stories of supply and demand. What, then, were the effects of these increasing volumes on domestic consumption? And what, in turn, were the effects of this consumption on the domestic economy? It is these two questions that the thesis seeks to answer.

By focusing on the seventeenth century, I am building on, and adding to, scholarship which considers early sugar consumption. Sidney Mintz' *Sweetness and Power* remains by far the most important and comprehensive text on the subject, providing extensive documentation of British sugar consumption. Mintz provided extensive and systematic analysis of rising sugar consumption over the centuries period under five headings 'medicine, spice/condiment, decorative material, sweetener, and preservative'.[64] He established that sugar had become embedded in English diets by 1700.[65] In agreement with Mintz, Nuala Zahedieh has written that by 1700, sugar 'was a significant presence in the lives of all Englishmen' and calculates a *per capita* figure of 7 lb a year.[66] While Carole Shammas's analysis of early modern

[63] A.B. Leonard and David Pretel, 'Experiments in Modernity: The Making of the Atlantic world economy' in A. B. Leonard and David Pretel (eds.), *The Caribbean and the Atlantic World Economy: Circuits of Trade, Money and Knowledge*, *1650-1914* (Basingstoke, Palgrave Macmillan, 2015) p. 8.
[64] Mintz, *Sweetness and Power,* pp. 74 - 150
[65] Mintz, *Sweetness and Power,* p. 77.
[66] Zahedieh, *The Capital and the Colonies*, p. 221.

consumption patterns across Britain and British America calculates a smaller *per capita* figure of 4 lbs a year, she still suggests that sugar consumption doubled over the last decades of the century. Like Zahedieh, Shammas argues that 'the amounts present seem to indicate that sugar was a constant presence in the lives of a significant number of Englishmen and women before 1700'. Shammas provides a threshold figure for mass-consumption, or the regular sweetening of both food and drink (24 lbs). By her estimate, 4 lbs a head was sufficient for 900,000 persons to consume at this rate. When she considers distribution, she observes that 'in reality, probably a small group consumed more than 24 lb, and most consumed less'.[67]

Shammas and Mintz, also importantly explore the ways in which sugar was consumed away from its role as a sweetener of tea and coffee. They argue that caffeinated beverages should not limit our understanding of how sugar consumption rose. Shammas notes that 'tea clearly needed sugar more than vice versa. If tea and other caffeine drinks had not been available, the sweetener probably would have been combined with some other substance'.[68] Mintz similarly asserts that 'it was not simply as a sweetener of tea that sucrose became an item of mass consumption between the late seventeenth century and the end of the eighteenth century'.[69]

This thesis adds archival weight to the arguments made by Mintz, Shammas and Zahedieh. It also supplements their work by producing evidence that widespread consumption of sugar came earlier. Mintz admits that, for this early period 'some speculation is unavoidable' because we do not have good enough source material to understand how sugar was introduced to the population.[70] In exploring a wide range of new qualitative and quantitative archival material, as well as reassessing sources that have previously been used, I trace how these increasing volumes of sugar became available to a wide range of people across the British Atlantic during a time when sugar moved from a luxury to a commonplace in the period before tea and coffee became widely consumed.

In the remaining chapters, I analyse trade and consumption in more detail. I bring the two halves of the story together, and show how demand and supply rose in tandem with each

[67] Carole Shammas, *The Pre-Industrial Consumer in England and America* (Oxford, Clarendon Press, 1990), p. 82.
[68] Shammas, *The Pre-Industrial Consumer,* p. 83
[69] Mintz, *Sweetness and Power,* p. 117.
[70] Mintz, *Sweetness and Power*, p. xxiii.

other. During the rest of this chapter, however, I focus in greater depth on the historiography of English and British American production and consumption of sugar to describe the progress of the sugar trade. *Section II.ii* sketches the historiography of sugar production to give an indication of how volumes of sugar exports increased. *Sections II.iii - II.v* look at the historiography of consumption and split it into two distinct parts. *Section II.iv* re-examines the statistical underpinning of previous work on sugar consumption. *Section II.v* details alternative ways in which historians have sought to gain insight into consumption and points out some of the ways in which rising sugar consumption has often been linked to consumption of caffeinated beverages. Section *II.v* briefly discusses price. Finally, in *Section III*, I turn to several visual sources to discuss consumption patterns further.

II.ii British West Indian Sugar Production in the Seventeenth Century

Previous historians have ascribed the growth and expansion in the British sugar industry from 1650 onwards to various underlying drivers. The growing number of enslaved Africans was an important factor in increased productivity.[71] (Enslaved populations began to grow in Barbados from the mid-1660s.)[72] Enslavers constantly increased the number of African people they purchased for the labour force. In the 1570s, 2000 Africans were transported every year to the Americas, rising to 7000 in the early 1600s. The figure was 18,000 annually by the 1660s.[73]

The islands were also devoting more and more land to sugar and to other non-staple crops, establishing large plantations that were more efficient and so able to produce more sugar for the international market at cheaper prices.[74] But the reassignment of agricultural land to sugar production meant that the islands had to rely on imports from North America and Great Britain for basic foodstuffs and other necessary primary products. North American colonies were therefore foundational to the success of the Caribbean sugar industry and vice versa. British West Indian islands could rely on staple exports from North America. Emigrants from England established permanent settlements in British North America and the land was well-suited to agricultural commodities which could not be shipped to England but, as Solow

[71] It must be noted that not all enslaved African people were used to farm sugar. They also worked in other industries across the islands.
[72] Hilary Beckles, *White Servitude and Black Slavery in Barbados, 1627-1715* (Knoxville TN., University of Tennessee Press, 1989) p. 124.
[73] David Eltis and David Richardson, *Atlas of the Transatlantic Slave Trade* (New Haven CT., Yale University Press, 2011) p. 201 and Walvin, *Sugar: The World Corrupted,* p. 43.
[74] Sheridan, *Sugar and Slavery*, p. 119.

explains, colonists were able to 'import British manufactures only by shipping their surplus food and raw materials to the slave colonies of the West Indies and earning there the foreign exchange that enabled them to meet their balance of payments deficits in Britain'.[75] By the 1680s over half of ships entering and leaving Boston were engaged in trade with the West Indies.[76]

The profitmaking mind-set of the planters and merchants must also be taken into account. As Dunn writes, these were explorers whose 'prime goal was to make money'.[77] Often coming from an agricultural background, they understood what sort of processes worked best when growing cash crops. The planters would employ efficiency enhancing management structures, which enabled specialization such as partnerships whereby one partner managed the plantation while the other was responsible for marketing the produce in Europe. Cooperation could enable economies of scale as when neighbouring plantations combined to build and operate a common sugar works.[78]

Moreover, the commercial and inter-imperial nature of the Atlantic economy fostered the growth of the sugar industry. Some argue that the protectionist mercantilist policies of the English government provided an environment conducive to expansion.[79] The Navigation Acts, a series of mercantilist policies put in place by the English and then British state from 1650 onwards, decreed that English colonies could only export their goods to England or other English colonies. Moreover, to compensate the colonist for such restrictions on their trade, sugar from foreign sources incurred heavy duties when arriving at English ports. This effectively guaranteed a strong home market for English producers. Nuala Zahedieh, however, argues that the Acts were not as important or effective as previous scholars have made out.[80] The state did not have the resources 'to enforce commercial legislation', rather it was advances in mercantile systems during the period from 1650-1700 which allowed England to establish the largest stake in Atlantic trade. [81] She argues that European markets

[75] Solow, 'Capitalism and Slavery', p. 731.
[76] Dunn, *Sugar and Slaves,* p. 210.
[77] Dunn, *Sugar and Slaves*, p. 65.
[78] Dunn, *Sugar and Slaves*, p. 65.
[79] See Sheridan, *Sugar and Slavery* and John J. McCusker, *Rum and the American Revolution: The Rum Trade and the Balance of Payments of the Thirteen Continental Colonies (*New York, Garland, 1989*).*
[80] Zahedieh, *The Capital and the Colonies*, p. 6.
[81] Zahedieh, *The Capital and the Colonies*, p. 6. In Chapter Two, I look at the role of the state in, and foreign influences on, domestic sugar refining in England in much more detail. I suggest that both that taxation policies

were actually a 'relatively competitive environment' which served to encourage merchants and traders 'to improve efficiency in trade and shipping'.[82] In terms of sugar, she explains that as packing improved, sugar freight rates fell, and as production increased, shipping space was better used. When sugar arrived in the home port, these greater volumes allowed refiners 'to reap economies of scale'.[83] The sugar industry at home saw a number of organizational improvements as well, such as more efficient work schedules. Furthermore, domestic refiners developed a number of tools and instruments that were specifically designed for the processing of sugar. Consequently, English sugar bakers were able to refine at a greater speed, and produce more sugar at a cheaper cost for the home market.[84]

III.iii British Atlantic Sugar Consumption in the Seventeenth Century

Scholarship which engages with the supply side of the sugar industry during these early years does not ignore consumption or demand altogether. However, our sense of what consumer desire for sugar looked like in these early years or how it changed over time has the potential to be expanded, building on the work of Mintz and others. To date consumption has been complementary but not integral to the arguments about the growth of the British Atlantic sugar industry. However, for the current study (to which consumption is integral) it is important to recognize how consumption has been depicted in the literature to date. Broadly speaking, this scholarship has employed two different methodologies to analyse demand and consumption. The first is the use of official trade statistics, which measure consumption using the volumes of the good which come into the home ports to calculate per capita consumption. The second is to weave a tissue of anecdotal and printed contemporary sources – such as social commentary – to track changes in consumer practices. I now consider both of these forms of analysis in turn, document their limitations, and explain how I will add to both of them in further chapters.

III.iv Consumption and Official Statistics

of the English state *and* an injection of foreign expertise were essential to the rise of the industry. They do not need to be in opposition to one another.

[82] Zahedieh, *The Capital and the Colonies*, p. 16.

[83] Zahedieh, *The Capital and the Colonies*, p. 220.

[84] In Chapter Two, I look in much more detail at the impact of legislation and home industry on the development of the trade.

Any study of consumption and its change and development is well supported by a broad statistical framework. When trying to understand how sugar was consumed over the course of the seventeenth century, it is useful to have an idea of the amounts and values of the good being imported into the country and then subsequently re-exported. Knowing that more sugar was coming into the country is key to understanding rising consumption levels. These figures enable us to have a broad sense of the scale of home consumption and, when divided by population totals, can give us an approximation of *per capita* consumption. This, albeit a flawed metric (it is unable to suggest distribution) is an important starting point for understanding consumption.[85]

The problems with this data mostly stem from a lack of precise and systematic information pertaining to imports to England during the seventeenth century. The period is widely acknowledged to be a period of statistical dearth. As Nuala Zahedieh puts it: 'despite the rise of a new spirit of statistical enquiry…and the accompanying interest in political arithmetic, the late seventeenth century is renowned as an age of statistical darkness'.[86] There are no long-run series of commercial statistics to document the trade activities of the nation during the century. For English consumption, there are a small number of extant commercial statistics: the 'Book of Tables' dating from 1663 and 1669 and the 'Inspector General's Ledgers' which begin in 1696.[87] These documents have been widely employed by scholars of international trade during this period, the most influential and commonly cited being Ralph Davis' article 'English Foreign Trade, 1660-1700'.[88] Richard Sheridan also lists sugar imports and exports for this time period, drawing on John Macgregor's *Commercial Statistics* however rather than the original customs documents.[89] Sheridan's figures are used by Carole Shammas in her calculations of *per capita* consumption in *The Pre-Industrial Consumer in England and America.*[90]

Both English and American commercial statistics are scarce. Like Carole Shammas in *The Pre-Industrial Consumer*, I am aware that comparative British-American work is impossible

[85] By using more eclectic source material, I describe distribution in Chapter Three.
[86] Zahedieh. *The Capital and the Colonies*, p. 9.
[87] BL Add MS 36785 & PRO CUST 3/3-5.
[88] Ralph Davis. 'English Foreign Trade, 1660–1700' *Economic History Review* 7.2 (1954) pp. 150-66.
[89] Richard B. Sheridan, *Sugar and Slavery: An Economic History of the British West Indies, 1623-1775* (Barbados, Caribbean University Press, 1974) p. 22.
[90] I turn to these sources in much more detail in the following chapters, and re-evaluate the conclusions drawn by Davis, Shammas, and others. Importantly, I question Shammas's calculations and argue that *per capita* consumption was greater. See further details in Appendix B.

if we rely solely on national data. Long-run import and export figures were not created in North America until the 1770s.[91] Nor is there a North American equivalent for Davis's discussion of seventeenth century English foreign trade. Some scholars, like Shammas, accept that we cannot calculate such a figure ('The year by year trend in the consumption of sugar by Americans is not known'), and therefore only begin comparing the two countries' consumption patterns as a whole in the years following 1770. [92]

There are other ways of arriving at an approximate figure, however. John J. McCusker (in his published PhD thesis) and David Eltis use export figures from British Caribbean Islands which document sugar being sent to North America.[93] When Eltis gives the final destination of exports, the figures only refer to 1680s onwards and therefore there is no clear comparison available for the early English statistics dating from the 1660s.[94] Given the paucity of official information for the seventeenth century, there remains great scope for error when these later figures are relied upon to explain or describe consumption patterns. Perhaps the most significant problem here arises when we look more closely at chronology within the seventeenth century. In America, there is little to suggest change over time. In England, these numbers only give us a tiny glimpse into 38 years of selling, buying and eating sugar across the country: a 38-year period where, as I have described in *Section II.ii* above, the sugar trade and industry developed in an unprecedented way.

In her critique of economic historians' work on consumption and changes in consumer behaviour Maxine Berg highlights many of the problems that arise when we frame consumption in the context of national, long-term trends. Such studies homogenize consumer practices into a single experience and do not allow for change, development, vicissitudes or fragmentation over time. The jump from the 1660s to the 1690s is one such amalgamation. Over this period, the ways that sugar cane was farmed, processed, packaged, shipped, refined, distributed, sold and then consumed all advanced. As there is so much more information for the supply-side of this commodity chain, and because – as Berg acknowledges – 'the study of the proliferation of new commodities…was largely left to social and cultural historians', the

[91] The Naval Officers' Shipping returns from America and the West Indies do record flows of sugar in the seventeenth century but they are very scrappy and difficult to use. Nevertheless, should this project be extended, they would be a profitable source. See TNA CO/5.
[92] Carole Shammas, *The Pre-Industrial Consumer*, p. 83.
[93] John McCusker, *Rum and the American Revolution* and David Eltis, 'New Estimates of Exports from Barbados and Jamaica, 1665-1701'.
[94] Eltis, 'New Estimates of Exports', p. 644.

demand for sugar has not been scrutinized in any systematic detail over this specific period. [95] In the eyes of the economic historian, demand has been seen merely as a function of price change incited by improving technologies. The ways in which consumers interacted with sugar and the change in consumption practices over time have not been given sufficient attention.

In this thesis. I take both a qualitative and quantitative approach. I use import statistics and population figures to track the amount of sugar arriving and to calculate *per capita consumption*. I also expand upon these with qualitative material to understand the ways in which sugar became obtainable by the wider population.

II.v Sugar Consumption: Other Approaches

Sugar consumption has been discussed in texts which move beyond import statistics and per capita consumption. The most important of these is Sidney Mintz's *Sweetness and Power,* which, as already mentioned, makes a compelling, indeed, charismatic argument about the importance of sugar consumption for the British economy. *Sweetness and Power* describes the way in which sugar was transformed from a luxury good, consumed only by the elite, to one that was eaten by everyone in Britain on an everyday basis. Mintz also draws on Eric Williams' *Capitalism and Slavery,* and forcefully demonstrates the ways in which sugar was linked to British economic development.

Sweetness and Power deals with sugar production and consumption separately. In the chapter on production, Mintz described the ways in which the sugar industry required huge capital investment from the European metropoles and in turn fuelled their economy. As I mention above, weaving together a tissue of qualitative sources, in the chapter entitled 'Consumption', he details rising consumption levels across Britain. Mintz therefore provides a valuable consumption side argument to the more discursive dynamic interpretation of the Williams thesis. In Chapter Three especially, I echo this approach.

Mintz also develops his arguments into a later time period, and notes the importance of the combined consumption of sugar and tea. Although he acknowledges that tea was not the only

[95] Maxine Berg, 'Consumption in Eighteenth- and Early Nineteenth-Century Britain', in R. Floud and P. Johnson (eds.), *The Cambridge Economic History of Britain, Vol. I Industrialisation, 1700–1860* (Cambridge, Cambridge University Press, 2004) p. 359.

factor in increasing demand for sugar, their complementarity in consumption remains an important theme. He argues that the later wide availability of sugar consumed mostly in sweetened tea and jam provided the necessary and cheap calories for nineteenth-century industrial workers to work the lengthy hours required by factories. The cup of sugared tea and the slice of bread and jam 'were an integral part of the modernization of English society'. Sugar positively affected 'the worker's energy output and productivity' and cheap sugar was 'the single most important addition to the British working-class diet'.[96] Moving from a luxury to a mass-consumed good, sugar 'epitomized the transition from one kind of society to another'. Mintz eloquently summarizes:

'The first sweetened cup of hot tea to be drunk by an English worker was a significant historical event, because it prefigured the transformation of an entire society, a total remaking of its economic and social basis. We must struggle to understand fully the consequences of that and kindred events, for upon them was erected an entirely different conception of the relationship between producers and consumers, of the meaning of work, of the definition of self, of the nature of things'.[97]

Following Mintz, I too argue that sugar was important for shifts in the British Atlantic economy namely the evolving interdependence of the colonial economy and the that of the centre at an early point in time. By looking at the seventeenth century, I am keen to move away from the eighteenth and nineteenth-century story of caffeinated beverages and to explore the effects of earlier consumption. Several narratives of sugar consumption highlight the fact that hot beverages were significant vehicles for sugar, and as a result, they suggest that mass consumption of the good does not really take off until the mid-eighteenth century. As Richard Sheridan puts it, the story of sugar is also the story of tea – in fact it is its 'inseparable companion'.[98] Sheridan quotes a memo to the board of trade from 1724, which explained 'the Consumption of sugar in England, by the use of Tea and Coffy is very much encreased of late, especially by the cheapness of tea which will alwise [sic] enlarge the consumption'.[99] As with demand for sugar, demand for tea is also seen as relative to its falling prices. The fall in the price of tea was rapid and precipitous. The first tea to reach the London market in 1652 was £3 10s per lb. By the 1660s it had fallen to £2 per lb.

[96] Mintz, *Sweetness and Power,* p. 149.
[97] Mintz, *Sweetness and Power,* p. 214.
[98] Sheridan, *Sugar and Slavery*, Chapter Two, pp. 18-35.
[99] Sheridan, *Sugar and Slavery,* p. 28.

Nevertheless, Sheridan insists, it was not cheap enough to be enjoyed by everyone until well into the eighteenth century, falling to about 4s 10d per lb during the later 1740s.[100]

Woodruff D. Smith more conclusively argues that 'the foundation' of demand for sugar was its consumption with tea and coffee and that this only happened after 1700.[101] As was the case with import statistics, there is more extensive primary literature on this phenomenon from the eighteenth century. Smith also draws upon the development of ideas surrounding respectability and gentility which coincided with the rise of tea and coffee drinking to forge his argument. Like Mintz, he weaves together a number of anecdotal sources, and consequently, his is a social or even sociological history, rather than an economic one. He is ultimately most interested in new rituals and forms of consumption and their effect on society at large.[102]

By linking the rise of sugar to the rise of tea and coffee, Sheridan and Smith both focus more heavily on the eighteenth-century. Smith ventures to assert that 'by the later part of the seventeenth century (and perhaps before), people at the middle levels of society… regularly consumed substantial amounts of sugar', but does not offer any concrete evidence as to why or how.[103] Indubitably, the rising consumption of hot drinks played an enormous part in increasing desire for sugar, nevertheless it must be recognized that sugar was consumed before this. Widespread consumption of coffee and tea may not have arisen until the eighteenth century, but this does not mean that sugar was not consumed by a varied section of people at an earlier date. Indeed, one can just as easily infer the opposite conclusion, instead arguing that the rapid uptake of bitter hot beverages and the desire to sweeten them is evidence that consumers already had a proclivity towards sweetness.

In North America, the lack of official data has meant that the story of sugar consumption has been pushed even later. James Walvin asserts that eating sugar took off 'almost 100 years later' in North America than it did in Britain.[104] Wendy Woloson suggests that rising demand

[100] Sheridan, *Sugar and Slavery*, p. 29.
[101] Woodruff D. Smith, *Consumption and the Making of Respectability* (New York, Routledge, 2002) p. 102.
[102] Smith draws heavily on scholarship focussing on the eighteenth-century 'World of Goods' and positions sugar among a number of newly available consumer items purchased by a flourishing middle class. The idea was first articulated fully by Neil McKendrick in 'The Consumer Revolution of the Eighteenth Century' in Neil McKendrick, John Brewer and J. H. Plumb (eds.), *The Birth of the Consumer Society* (London, Harper Collins, 1982).
[103] Woodruff D. Smith, *Consumption and the Making of Respectability*, p. 99.
[104] Walvin, *Sugar: The World Corrupted*, p. 202.

in Britain actually forestalled American consumption by taking sugar off the international market, meaning that North American levels of sugar consumption lagged behind Britain until the nineteenth century. According to her, it was not until 1830 that sugar appeared regularly in shops and stores in the United States.[105] In contrast, Carole Shammas tentatively suggests that rising consumption levels might have begun earlier. British North American colonies, she says, 'may not have been too far behind the mother country in this regard, considering the importance of sugar products and the volume of groceries entering illegally'.[106] Others see consumer habits developing at the same time on both sides of the ocean. Demand for new goods in British North America has been extensively documented by Cary Carson in his study of the consumer revolution in the Atlantic world. Carson argues that immigrants imported their consumption preferences with them.[107] T.H. Breen also tracks the 'British baubles' which were imported into America.[108] These authors see American consumers as following British fashions with almost no time delay. Nevertheless, these authors also concentrate on the eighteenth century. Given the expansion of sugar production during the seventeenth century, there remains room for a systematic study of early patterns of sugar consumption right across the British Atlantic.

Those familiar with the literature will be aware that, beyond the work of Mintz, Zahedieh and Shammas, the task has also already been partially undertaken by Jon Stobart.[109] Stobart constructs a far more detailed picture of how sugar and other new goods were actually purchased by individuals: where the grocers' shops were, what sort of goods they stocked, and how often they were frequented. Influenced by (now axiomatic) ideas about the rising levels of discretionary income influencing spending habits over the long eighteenth century, he explores how the middling sorts spent their money on new groceries - including sugar. His study is novel and important because it looks at goods and purchases that are non-durable, and do not show up with such frequency in probate records. His emphasis is broad – the entirety of the grocery trade – and as such sugar is not the sole focus of his study. However, his findings argue that the trade was vibrant, dynamic and diverse as early as 1650 and that

[105] Wendy A. Woloson, *Refined Tastes: Sugar, Confectionery, and Consumers in Nineteenth-Century America* (Baltimore, John Hopkins University Press, 2002) p. 23.
[106] Shammas, *The Pre-Industrial Consumer*, p. 65.
[107] Cary Carson, 'The Consumer Revolution in Colonial America: Why Demand' in Cary Carson ed. *Of Consuming Interests: The Style of Life in the 18th Century* (Charlottesville, University Press of Virginia, 1994).
[108] T. H. Breen, *The Marketplace of Revolution: How Consumer Politics Shaped American Independence* (New York/Oxford, Oxford University Press, 2004).
[109] Jon Stobart, *Sugar and Spice: Grocers and Groceries in Provincial England, 1650-1830* (Oxford, Oxford University Press, 2013).

local and rural consumers had access to a broad range of goods – including sugar in its various forms. Importantly for this thesis, Stobart uses his study to push back the timeframe for studies of consumption, arguing that the grocery trade was 'already vibrant and geographically widespread before the period of de Vries's industrious revolution or indeed McKendrick's consumer revolution'.[110]

In other work, Stobart has argued that consumption needs to be considered as a *process*.[111] In these studies, the focus is not on the physical objects themselves, but on the systems of supply and demand that enabled consumption. This framework is helpful for the understanding of sugar consumption in that it tells us how sugar moved out of port cities and into the localities by way of the grocery trade. Stobart gives us a detailed history of the development of this trade in *Sugar and Spice*, but most recently he has focused more explicitly on the relationship between new colonial goods and local grocers in the article 'Making the global local? Overseas goods in English rural shops, c.1600-1760'. Here he draws on probate inventories from 36 villages in four counties to examine the shifting place of overseas goods in the stock of English rural shops. Stobart explains that a range of colonial groceries were to be found in shops but their availability varied considerably as did their proportion within the rest of the goods on sale. He argues that the viability of the shop did not rely on the new goods, but their widespread introduction of these new goods indicates that the village shop and the rural consumer were integrated into the 'mainstream of consumption'. Market accessibility is important in that it enables consumption to increase, and Stobart demonstrates just how easy it would be for consumers to access sugar. While Stobart makes an important contribution to our understanding of how ordinary consumers might have accessed sugar, his study focuses predominantly on the eighteenth century. He does have some sources from the seventeenth century and analyses them convincingly. However, like all the other studies of consumption, the majority of his arguments are made

[110] Stobart, *Sugar and Spice*, p. 39. In Chapter Three, I consolidate Stobart's findings and show sugar to pervasive and widely available in the second half of the seventeenth century. As I discuss in the chapter itself, and in the Introduction, this lends support and provides, further evidence for, the arguments for the redrawing of chronology of modern economic growth made by Jane Humphries and Jacob Weisdorf. Increased availability and access to sugar would have been one incentive that made labourers work harder to earn the wages to consume the sweet good.

[111] Jon Stobart, '"Making the global local?" Overseas goods in English rural shops, c.1600-1760', *Business History: Business and Global Environmental History*, 59:7 (2017) pp. 1136-1153.

using source material from the later period.[112] By contrast, in a recent PhD thesis, Marion Menzin redraws the chronology of New England sugar consumption. Examining previously neglected archival sources, she argues that, by 1700, New Englanders were habituated to sugar and incorporated it regularly into their diets. Sugar initiated 'the first consumer revolution' in America.[113] This thesis also builds on the work of Menzin and Stobart by arguing for widespread consumer demand across England and British North America by 1700. Furthermore, it develops their arguments by demonstrating the ways demand for sugar influenced the Atlantic economy as a whole.

II.vi A note on prices

Throughout this chapter, I have encouraged a discussion of sugar consumption that moves beyond the price of the good; which looks to other reasons for increasing consumption and which argues that prices must always be contextualised. Looking at the rest of Western Europe, Eddy Stols makes the interesting observation that there was not necessarily direct correlation between low prices and mass-consumption and that such was the prestige and social importance of sugar in urban centres on the continent, dearness encouraged rather than deterred consumption amongst the lower and middle classes in the first half of the seventeenth century, before the price drop in the second.[114] The aim of this thesis is to provide a similar sort of contextualisation for British Atlantic prices.

It would be remiss however, to avoid discussion of prices altogether. Despite Stols' assertion, it would be almost impossible for consumers to purchase sugar if it really were extremely expensive. Prices for sugar varied dramatically depending on its quality, level of refinedness, and the season. In Chapters Two and Three, I provide more detail of the extent of this variety across both Britain and North America using a range of qualitative source material. Importantly, however, sugar was undoubtedly becoming cheaper over this period. In a price series created for London by Jeremy Boulton, the price of sugar drops by 56% over the

[112] For example, of the 31 dated archival sources in the bibliography of *Sugar and Spice* only one comes from the seventeenth century. This is somewhat an over-exaggeration as there are sources not dated in the bibliography, but are in the text itself and are from the earlier period. See Stobart, *Sugar and Spice*, pp. 276-278.
[113] Marion Menzin, *The Sugar Revolution in New England: Barbados, Massachusetts Bay, and the Atlantic Sugar Economy, 1600-1700* (Unpublished PhD Thesis, Harvard University, 2019) p. 105.
[114] Eddy Stols, 'The Expansion of the Sugar Market in Western Europe', in Stuart Schwartz (ed.), *Tropical Babylons: Sugar and the Making of the Atlantic World* (Chapel Hill, UNC Press, 2006) p. 264.

period 1580-1700 and by 49% between 1650 and 1700.[115] Although limited to a major metropolitan area, Boulton's numbers provide a useful indication of the precipitous decline in price experienced in the seventeenth century. Sheridan also notes the downwards trend in annual average muscovado prices over the 1670s and 1680s, dropping from 23s per cwt in 1674 to 18s in 1687.[116] This progression however was halted by war. Davis and Davies also comment on the precipitous drop with Davis noting that the retail price of sugar halved between 1630 and 1680.[117] Davies argues that the price of muscovado in 1686 was the lowest it would be for the next two hundred years.[118]

All four authors findings complement my argument about sugar's journey down the socio-economic hierarchy. Not only were there multiple opportunities for consumers to buy and eat sugar in the seventeenth century, it was also increasingly available at a price that they could afford.

Section III Visual Depictions of Sugar

While the focus of this thesis is the British Atlantic world, the European context can also prove a useful comparator and give clues to the nature of British consumption. Two texts in particular, Daniel Strum's *The Sugar Trade: Brazil, Portugal, and the Netherlands (1595-1630)* and Eddy Stols' beautifully crafted essay 'The Expansion of the Sugar Market in Western Europe' trace the rises in production and consumption in relation to each other, and both authors find many instances of ordinary consumers across Europe incorporating sugar into their diet, from the sixteenth century onwards.[119] Their innovative technique is to draw on visual representations of everyday life (see *Images I-IV* below). Their gaze is centred on the consumption patterns of western European countries, most specifically Portugal, Spain and the Netherlands.

[115] Jeremy Boulton, 'Food Prices and the Standard of Living in London in the "Century of Revolution", 1580-1700.'*The Economic History Review,* 53: 3 (2000). p. 488.
[116] Sheridan, *Sugar and Slavery*, p. 496.
[117] Ralph Davis, 'English Foreign Trade', p.153.
[118] K. G. Davies, *The North Atlantic World in the Seventeenth Century* (Oxford, Oxford University Press, 1974) p. 189. See also: K. G. Davies', *The Royal African Company* (London, Longman, 1957) p. 366.
[119] For example, see Strum, *The Sugar Trade*, p. 30. 'Originally an expensive condiment and a component of sumptuous decorations, it [sugar] was becoming an increasingly commonplace ingredient in the cuisine of the middle and even the lower classes. More and more, sweets, jam, compotes, candied fruits, cakes and other sugar related products were reaching ever humbler segments of society in growing quantities and at lower prices.'

These countries' early involvement in the sugar trade is one reason why the authors are able to ascertain high levels of early consumption. However, I argue that there is also an important link between the two authors' use of visual source material and their understanding of sugar's chronology. Stols and Strum are able to identify the early proliferation of sugar and sugared goods amongst home consumers because there are numerous visual representations of these goods. Across both Northern and Southern Europe, from the end of the sixteenth century, there was an efflorescence of painting which depicted scenes of everyday life. Across the Low Countries, the genre of *stilleven* had emerged by the first decades of the 1600s. These paintings' preoccupation with domestic subjects' 'personal possessions, commerce, trade and learning' reflected the increasing urbanisation of Dutch and Flemish society and the middling classes' desire to see their own existence reflected in painting.[120] Dutch still lives are characterised by their domestic setting and by their depictions of flowers, fruit, and tableware. Genre Painting, the term given to scenes of everyday, non-elite life, also grew in popularity in the Low Countries during this period, many of its practitioners elevating what had been 'critically regarded as a humble form to heights of desirability rivalling more traditionally esteemed subjects such as history paintings and paintings of classical mythology'.[121] Simultaneously, across the Iberian Peninsula, a similar tradition evolved, quite possibly because of the closely intertwined commercial and trading networks which I explored above. However, rather than specifically responding to the growing urbanisation and changing commercial world, the Iberian genre grew up out of a southern Renaissance tradition of *trompe l'oeil* and illusionistic tile work. There was a smaller appetite for domestic scenes but a significant sub-genre arose, known as *bodegones*, or 'pantry scenes'.[122] Like Dutch still lives, they depicted a kitchen interior, often with a variety of foodstuffs on a table.

While continental European painting embraced those lower down the social scale as potential subject matter, it wasn't until much later in the 1700s that genre painting depicting the lives

[120] Walter Lietke, 'Still-Life Painting in Northern Europe, 1600–1800', *Heilbrunn Timeline of Art History* (New York, The Metropolitan Museum of Art, 2000–). [https://www.metmuseum.org/toah/hd/nstl/hd_nstl.htm Accessed: March 2020].
[121] Jennifer Meagher, 'Genre Painting in Northern Europe', *Heilbrunn Timeline of Art History* (New York, The Metropolitan Museum of Art, 2000–) [https://www.metmuseum.org/toah/hd/gnrn/hd_gnrn.htm Accessed: March 2020].
[122] Jennifer Meagher, 'Still-Life Painting in Southern Europe, 1600–1800', *Heilbrunn Timeline of Art History* (New York, The Metropolitan Museum of Art, 2000–) [https://www.metmuseum.org/toah/hd/sstl/hd_sstl.htm Accessed: March 2020].

of poorer Britons emerged.[123] Stols and Strum find it easier to outline the early explosion of sugar and sugared goods due to the plethora of visual material available to them. Studies of English and North American consumption cannot do this as easily. These countries were not home to an artistic culture devoted to depicting everyday life. England notoriously suffered from a dearth of artistic training institutions. Famous painters from the period, such as Van Dyck and Rubens, were raised and schooled abroad before coming to England and their specialty was in portraiture, not domestic scenes. In an unpublished doctoral thesis, Harry Mount takes this argument further, and asserts that the British art establishment deliberately rejected Netherlandish artistic styles until the nineteenth century, defining them as vulgar and inferior.[124] Studies of British and North American everyday consumption of sugar, across the socio-economic scale, do not therefore have the same visual sources from which to draw upon for the early years.

Strum's oversized volume lavishly reproduces continental European images depicting sugar to great effect. I look here at a few examples as they can also be taken as an important source for British and British American consumption patterns. The sweets, pies, and jams pictured here, as we will see in later chapters, also graced the tables of the English and then British Atlantic world. Take, for example, *Image I,* a sweet spread by Thomas Hiepes, a Spanish painter active during the early seventeenth century. Against a stark, plain background, positioned on a starched white tablecloth delicately fringed with lace, we see a variety of the sorts of comestibles sugar could be used for. On the bottom left, there's a generous pile of a sticky nougat confection, known as turrón; above it a neatly packaged jar of jam or preserved fruit, also full of

Image I Thomas Hiepes, *Table with Sweets*, 1624 (Private Collection)

[123] Jennifer Meagher, 'Genre Painting in Northern Europe', *Heilbrunn Timeline of Art History* (New York, The Metropolitan Museum of Art, 2000–). [https://www.metmuseum.org/toah/hd/gnrn/hd_gnrn.htm Accessed: March 2020].
[124] Harry Mount, *The Reception of Dutch Genre Painting in England, 1695-1829* (Unpublished PhD thesis, Corpus Christi College, University of Cambridge, 1991) *passim*.

sugar. In the centre, we are presented with an intricately decorated cake, encrusted with sugar paste, and to the right, a teetering pile of crisp doughnut rings. Right in our sight line, in the foreground, moreover, Hiepes has placed a bunch of sugar cane, reminding the viewer from what crop all these delicacies originated.

Image II Clara Peeter, *Still life with dainties, rosemary, wine, jewels and a burning candle*, 1607 (Private Collection)

Image II is Clara Peeter's more modest *Still Live* from 1607. Under the light of a flickering candle, two glasses of wine sit with a smattering of sugared delicacies. There are two woven biscuits, one in a heart shape, covered with white icing, and the other curved into the shape of the letter 'P', a playful hint of the author's surname perhaps. Then there are various smaller sweets, probably confits (often sugar-coated fruits or nuts), the gleam of their white sugar powder reflected in the pewter dish.

We can also turn to the Haarlem painter William Claesz Heda's elegant *Still Life with a Silver Ewer and Pie* (*Image III*). Here the sugar is both visible and invisible. It would have been baked into the pie crust and its fruity filling, unseen to our eyes. But the cook has also strewn the pastry with a delicate dusting of white powder.

Image III William Claesz Heda, *Still Life with a Silver Ewer and Pie,* 1647 (Weimar Castle, Weimar)

Image IV An Amsterdam Gable Stone
(Strum, *The Sugar Trade*, p. 45.)

Sugar was ubiquitous in seventeenth century continental art. And it was not only in the paintings. It also found its way into the urban fabric of the city. Buildings in Dutch cities were often adorned with gable stones or wall tablets (*gevelstenen* in Dutch). These were stone tablets, laid into the walls, with an image and a brief caption. They would often depict scenes of commercial life. *Image IV* is one example. In it a confectioner sells cones of sugar, wrapped in their customary blue paper, to an eager customer.

Image V Richard Collins, *A Family of Three at Tea*, c.1727 (Victoria and Albert Museum, London)

All of these sugared goods were consumed by English and British Atlantic consumers and therefore these European paintings are valuable sources for understanding early British Atlantic consumption. It was not until the eighteenth century that Britain's artistic culture began to change and depictions of everyday life became more fashionable among elites, meaning that sugar began to appear in paintings. Rather than show us that sugar was ubiquitous across society, the shift in artistic culture has instead encouraged the idea that sugar was confined to the tea-tables of the upper classes. The paintings which most frequently depict sugar are known as 'conversation pieces'. These paintings were an innovative form of portraiture, designed to capture an elite or upper middle-class social group at leisure. Kate Retford's compendious survey of the genre reproduces many of them and throughout her volume, we are often able to see, nestled among the tea cups, a bowl of sugar.[125] In *Image V,* to the left of the young girl's elbow, there's an elegant box with its lid leaning against it, and the lumps of sugar just peep into sight.

[125] Kate Retford, *The Conversation Piece: Making Modern Art in Eighteenth Century Britain* (New Haven, Paul Mellon Centre for Studies in British Art by Yale University Press, 2017).

'Conversation Pieces' are visual documents of the thriving consumer society which reached its zenith during the 1700s. During the eighteenth century, English, Dutch and Americans bought more and more 'things'. These new spending habits caused huge shifts in economic systems, indicating the ascendance of globally integrated networks of trade.[126] One consequence of this was that drinking tea and coffee became more popular as a refined social pastime and paintings of the activity were commissioned to assert a family's social standing.

In this way, the artistic culture of British America had parallels to that in Britain. The Continental European fashion for depiction of domestic interiors did not spread across the Atlantic. As in England and then Britain, portraiture reigned supreme until dethroned by landscape painting in the later 1700s. *Image VI* is a portrait of Susanna Truax, dated to 1730 and attributed to an artist known as the Ganesevoort Limner, who was possibly Pieter Vanderlyn, a Dutch artist who emigrated to New York in the early eighteenth century. Limners were itinerant painters, who made their living creating portraits for elite men and women who wanted the art to reflect their social status, much like the commissioners of 'Conversation Pieces'.[127] Susanna's portrait is an excellent example of a limner's handiwork. She stands, dressed in lavish fabrics, her feet tucked into well-heeled shoes, on the cusp of dropping a lump of sugar into a fine china tea cup. Susanna lived in Albany, New York, but the sugar would have come from the Caribbean, the fabric for her dress from Europe by way of India and the

Image VI Gansevoort Limner/ Pieter Vanderlyn, *Susanna Truax,* 1730 (National Gallery of Art, Washington D.C.)

[126] Neil McKendrick, 'The Consumer Revolution of the Eighteenth Century', *passim.*
[127] See T. H. Breen, 'The Meaning of "Likeness": Portrait-Painting in an Eighteenth Century Consumer Society', in Ellen G. Miles (ed.), *The Portrait in Eighteenth Century America* (Washington D.C., Smithsonian Institution, 1993) p. 49.

teapot, cup and saucer perhaps from England and her shoes perhaps from Holland. [128] This combination of features place Susanna firmly in the blossoming consumer society of the eighteenth century.

Image VII Trade Token, 17th century (Museum of the City of London, London)

The flourishing explosion of eighteenth-century visual material across the British Atlantic, which documented the activity of tea drinking and other activities, lends credence to studies of sugar consumption which focus on the later century and which link sugar together with elite and upper middle-class tea and coffee drinking, and with what is known as the 'consumer revolution'.[129] There are other visual sources for sugar to turn to however, and this thesis explores some of them in later chapters. For example, there are numerous trade tokens issued by the city of London during the mid-seventeenth century, at a point at which the country was short of coinage. These often replicated the sign of the shop by which they were issued. *Image VII* is one such token; worth a farthing, it was issued for a business at the sign of the Sugar Loaf, in New Gravel Lane (now Garnet Street), Middlesex. On it you can faintly make out the embossed sugar loaf. Sugar loaves made their way frequently onto grocers' shop signs, and thus, like the gable stones of Amsterdam, would have been core parts of the city's visual environment.[130]

Section IV New Geography and New Source Material

Thus far, this introductory chapter has traced the development of the sugar trade into the seventeenth century and identified space for a study which traces the ways in which sugar

[128] By this point sugar was unlikely to have come from Brazil whose production of sugar had declined by the end of the seventeenth century. Matthew Edel, 'The Brazilian Sugar Cycle in the Seventeenth Century and the Rise of West Indian Competition', *Caribbean Studies*, 9:1 (1969) pp. 24-44.
[129] See discussion of Smith above p. 41.
[130] Here I take inspiration from Melissa Calaresu who uses visual sources to show the wide range of people who consumed ice cream in Naples and the various ways in which they did so, Calaresu reminds us that a 'luxury' good needs to be heavily contextualised. By drawing on a wider variety of sources, she demonstrates that the good was consumed across socio-economic boundaries. Calaresu's ice cream eaters were from all social classes, not just the elite. Ice cream was eaten in the street, 'on the hoof', by rich and poor alike. A closer inspection of sugar consumption in England and Colonial North America in the following chapters will also break down these social boundaries. See Melissa Calaresu 'Making and Eating Ice Cream in Naples: Rethinking Consumption and Sociability in the Eighteenth Century', *Past and Present*, 22 (2013) p. 76.

reached the consumer during the latter part of the seventeenth century – during the period in which the good moved from an elite luxury, to a widespread commonplace.

As I outlined in the geographic scope of the research in the Introduction, this study of sugar trade and consumption is deliberately concerned with the consumption patterns of both England *and* British North America. Building on the work of scholars such as Carole Shammas, Emma Hart, and James Walvin, I look at consumption patterns across the Atlantic basin, permitting a better understanding of the extent and scope of sugar's spread.[131] Englishmen and British Americans were habituated to sugar by 1700. In Chapters Three and Four, I look in more detail at the proliferation of sugar throughout British America. British America was filled with British citizens who, along with their belongings, brought with them their consumption patterns when they emigrated. This is not to suggest that the two countries are identical, rather I see the variation in the material situation of the two countries as useful when trying to analyse and understand changing trade and consumption practices.

There is a further specific reason why the understanding of widespread sugar consumption in British North America is thought to come much later than England. There is a lingering and persistent notion detectable in scholarship that early British Americans were not significant consumers. The stereotype of the early-colonial self-sufficient farmer has been substantially deflated over the last thirty years.[132] But when trade with the Caribbean is discussed, there is still a sense that seventeenth-century North American colonists were middlemen and traders rather than consumers. As Simon Smith writes, 'North American merchants have primarily been seen as service providers, skilled principally in the art of fetching and carrying'.[133] North America furnished the Caribbean Islands with food, timber and services so that sugar planters could maximize profits from production of sugar. When their roles as consumers is considered, the story is once again an eighteenth century one when the profits made by

[131] Carole Shammas, *The Pre-Industrial Consumer;* James Walvin, *Sugar: The World Corrupted* and Emma Hart, *Trading Spaces: The Colonial Marketplace and the Foundations of American Capitalism* (Chicago, University of Chicago Press, 2019).
[132] See, most recently, work by Emma Hart on the Early American Marketplace such as *Trading Spaces: The Colonial Marketplace.* Earlier work emphasising the integration of the North American economy with the rest of the Atlantic market includes: R. L. Bushman, 'Markets and Composite Farms in Early America' *William and Mary Quarterly*, 55 (1998); Carole Shammas, 'How Self-Sufficient Was Early America?', *Journal of Interdisciplinary History*, 13 (Autumn 1982) and T. H. Breen, 'An Empire of Goods: The Anglicization of Colonial America, 1690– 1776', *Journal of British Studies*, 25 (1986).
[133] Simon Smith, *Slavery, Family and Gentry Capitalism in the British Atlantic: The World of the Lascelles, 1648-1834* (Cambridge, Cambridge University Press, 2006) p. 21.

British North Americans from their sales of raw materials to the Caribbean were used to purchase manufactured goods from Britain – stimulating the domestic British economy.[134] It is these eighteenth-century manufactured goods (e.g. tea-sets, cotton clothing and other 'baubles') which have preoccupied studies of the early American consumer. As Breen writes, by 1770, the average American was spending a quarter of their annual income on manufactured items.[135] I argue here that seventeenth-century consumption of sugar, and its importance for integrating North Americans into the commercialising Atlantic world, also needs to be considered.

Like the conversation pieces and other visual sources I analysed above, manufactured goods also have the advantage of being more 'visible' to the historian. Either they have survived to the present in the form of physical objects, or they are more likely to have been recorded at the time as something of value in probate inventories. They were also likely to be depicted as items of status in portraiture, hence Susanna Truax's tea is immemorialised because it was consumed in a china vessel, and the sugar lumps appear because they occupy the accompanying plate which together with the tea pot contribute to the material appurtenances constructing the status of the woman portrayed (*Image VI*). Sugar and molasses *per se* – stored and traded in sacks and barrels, bought by consumers in commercial environments, prepared in kitchens – were not subject to high status visual record in the same way and are therefore less immediately obvious to the historian's gaze.

All this goes to show that we need a corrective to the earlier literature on North American consumption. Sugar arrived in North America with the earliest colonists and it sweetened their diets from the very beginning. Just as more sugar was being consumed in England in this early period, so too was it being consumed along the east coast of North America. This new geography contributes to the literature pulling North America into the nexus of Caribbean Trade. As I have discussed, North American colonies were foundational for the development of the British Caribbean, as they furnished the islands with staple goods, especially wood and fish. In 1676 English customs official Edward Randolph reported that

[134] C. Knick Harley, 'Slavery, the British Atlantic Economy and the Industrial Revolution', *Oxford University Discussion Papers in Economic and Social History*, Number 113, April 2013 (https://www.economics.ox.ac.uk/materials/papers/12739/harley113.pdf). p. 1.
[135] Breen, 'The Meaning of "Likeness"', p. 42.

'Boston may be esteemed the mart town of the West-Indies'.[136] However the reciprocal trade *from* the Caribbean upwards to North American colonies has not been analysed as extensively. North American early domestic consumption of sugar demands investigation. Sugar constituted the first 'consumer revolution' in British North America and was a key part of diets before the eighteenth-century flourishing of other consumer goods.[137]

Section V Conclusion

By reassessing the extent of the sugar trade and consumption in the early British Atlantic, this thesis goes further than adding weight to the arguments for widespread consumption in the seventeenth century. It locates consumer demand at the forefront of the emergence of capitalism. In doing this, I am contributing to the broader interpretation of the Williams thesis in several ways. Firstly, through my analysis of the flows of sugar and the rise of refining in England in the following chapter, I am adding more detail to the understanding of the relationship between colonial extraction and domestic processing and industrialization. Sugar refining was an early heat-intensive industrial activity, which created backward and forward linkages on the coal, copper and coopering sectors. It generated capital in the centre through the processing of the product of enslaved labour in the colonies.

Secondly, I am inserting a specific study of sugar consumption into the scholarship. Throughout this introductory chapter, I have discussed the ways in which historians have been keen to emphasize the significance of technological change and innovation, the reorganization of working practices (both on the plantations and in other stages of sugar production), and the spread of manufactures to the development of the Atlantic economy, while neglecting (for understandable reasons) the role of sugar consumers. In the rest of the thesis, building on the William's thesis and its subsequent interpretations, I argue for the importance of sugar, and consumers' appetites for sugar, in creating the structural changes that proliferated through the economy during the seventeenth century and into the eighteenth.

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[136] A. T. S. Goodrick and R. N. Toppan (eds.), *Edward Randolph Including his Letters and Official Papers from the New England, Middle and Southern Colonies in America*, 7 Vols. (Boston, Printed for The Prince Society by John Wilson & Son, 1898-1909) Vol. III, p. 249.

[137] The literature on North America's 'consumer revolution' is centered mostly on from 1690 onwards, and mostly characterizes seventeenth-century consumer culture as limited. This is summarized in Lorena S. Walsh, 'Peopling, Producing, and Consuming in Early British America' in Cathy Matson (ed.) *The Economy of Early America: Historical Perspectives and New Directions* (University Park, PA, The Pennsylvania State University Press, 2006) pp. 142-144.

The voracious consumer demand for sugar changed the global economy indelibly. Economic historian David Eltis noted that in the seventeenth century Barbados alone 'was probably exporting more [by value], proportionate to its size and population, than any other colony or state of its time or, indeed, in the history of the world up to that point'.[138] In sugar, we see the swing towards a world economy based on production of colonial goods to meet a seemingly insatiable consumer demand. This was as integral to the ascent of capitalism as technological, agricultural and organizational change.

This thesis is also a product of its cultural moment. There have been two recent radical swings in public thought which have strongly influenced its creation, and are integral to the motivations for writing. On the one hand, there is now a widespread recognition of sugar's deleterious effects on public health: where once fat was perceived by the medical professions to be the most dangerous foe, sugar has become public health enemy number one. As one of the cheapest commodities, it has invaded our diet. More importantly, it is found most commonly in ultra-processed foods, which are cheaper and more accessible for lower-income groups. There is a bitter irony that it most grievously affects the health of African Americans, who disproportionately suffer from diabetes and other sugar-related illnesses due to high levels of poverty.[139] Where once people of African descent were forced to farm the cane, they are now forced to eat it.

On the other hand, there has been a resurgence of interest among historians in understanding the role of capitalism and globalisation in fostering global inequalities. This thesis is evidently not attempting an in-depth study of capitalism, but it helps to show that capitalism relied on inequality from its inception. Capitalism emerged in a world where large sectors of the economy were connected to slavery. As Eric Hilt summarises, 'our economic history includes no small measure of cruelty, coercion and expropriation, rather than free exchanges occurring in the context of secure property rights.'[140] The nascent capitalist systems which the sugar trade engendered and enabled, intrinsically relied on the exploitation of black bodies to produce their crop and to create profit.[141] The history of capitalism seeks to de-

[138] David Eltis, 'New Estimates of Exports' p. 642.
[139] Marion Nestle has written extensively on this problem, particularly in *Soda Politics: Taking on Big Soda (and Winning)* (New York, Oxford University Press, 2015).
[140] Eric Hilt, 'Economic History, Historical Analysis, and the "New History of Capitalism"', *Journal of Economic History,* 77:2 (2017) p. 514.
[141] In the same vein, in August 2019, *The New York Times* published an immensely influential and, to some controversial, edition of their weekend magazine. Entitled *1619*, it commemorated the 400-year anniversary of

familiarize our contemporary capitalist system. It shows that the system we have today is not a natural nor inevitable condition. In the following chapters, I turn to several aspects of the sugar trade in more detail. Beginning, in Chapter Two with an investigation into the changing nature of imports and exports of sugar into England and how the sugar refining industry developed in response.

the arrival of enslaved people in Virginia, and it included a plethora of articles articulating the vital contribution enslaved labour made to America – both its economy and culture. There are two specific articles which speak directly to the points made in this thesis. The first, by Khalil Gibran Muhammed, looks at the later story of sugar in America ('The sugar that saturates the American diet has a barbaric history as the 'white gold' that fuelled slavery' https://www.nytimes.com/interactive/2019/08/14/magazine/sugar-slave-trade-slavery.html) and the second, by Matthew Desmond explains how plantation agriculture influenced capitalist culture ('In order to understand the brutality of American capitalism, you have to start on the plantation' https://www.nytimes.com/interactive/2019/08/14/magazine/slavery-capitalism.html).

Chapter Two – Sugar Trade, Industry and Refining in England

Contents:

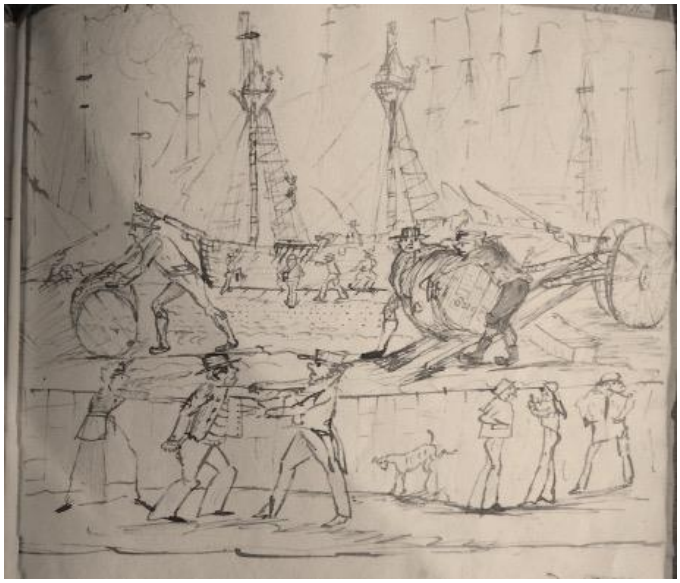

Image I Anonymous, *Sketch of sugar barrels unloaded at port*, 18th century (Private Collection).

Image II Samuel Scott, *A Thames Wharf*, ca. 1757 (Victoria & Albert Museum).

Section I Introduction

I.i Sugar enters the port

'the great increase in sugar imports is so conspicuous in our customs records in the seventeenth century that no one has yet sought to measure the trend'.[1]

In the seventeenth century, English ports were busy. Boats slowly made their way up to the wharf, their hulls stuffed with cargo from all over the world. Their crew, weather-beaten, perhaps homesick, and bored with their monotonous rations, would have their eyes fixed on the shore, desperate for that first glimpse of dry land and a meal with more variety than stale biscuit and half-rotten meat. When their legs first touched dry land, a little shaky and a little sea-worn, these sailors would have melted into a diverse crowd. The shore thronged with people, a mix of rich and poor: merchants anxiously awaiting their goods, hoping they had survived the journey across the seas; strong men primed to unload the boxes and barrels; customs officials ready to inspect the goods and value their taxation appropriately; paupers hoping to catch a spare morsel or scrap of food; members of the navy parading in their shiny boots; and shipwrights anticipating new business.

[1]Joan Thirsk, *Food in Early Modern England: Phases, Fads and Fashions* (London, Bloomsbury, 2006) p. 94.

The two images above capture the sense of this vibrant hustle and bustle. They are eighteenth-century depictions of London's quayside but it is conceivable that the scene would have looked similar in the previous century. *Image I* is a sketch of sugar barrels being rolled onto shore down the gangplank of a ship. A young woman accosts two gentlemen in the foreground and, of course, there is the ubiquitous dog next to them. *Image II* is a more detailed representation of the various quay-side activities. We see a customs man, in a bright blue coat, leaning intently on a barrel to take note of the imports. His interlocutors looking less than enthusiastic about the discussion, one has his hand shoved defensively in pockets, while the other leans insolently on another barrel chewing on a pipe of tobacco. To their right, a group of industrious men open up barrels to have a look at their contents. In the background, a cart is being loaded up with goods, ready to transport them to eager consumers. And up high, a barrel hangs precipitously, either on its way in or out of the open window and an alert looking spaniel stands guard.[2]

We might now turn our mind's eye onto one seventeenth-century ship in particular, making its slow and stately way into port. We can imagine its sailors have arrived in London, the capital city and a thriving entrepôt by the later part of the century. Coming from Barbados, it carried inside it large barrels of sugar, both brown and white, and molasses as well as a veritable cornucopia of other goods: spices, like ginger and pepper as well as cottons, wine, beeswax and even 'Elephant's teeth'.[3] During an allocated timeslot, the ship crawled up the Thames to the quays on the north side of the river, and on arrival, the sailors began to relieve the ship of its freight.

On descending the vessel, our sailors' bodies would have been immersed into a world quite different from the salty fresh air of the open seas. Ears would have been assaulted by a cacophony of cries, those of street sellers, and the harassed shouts of instruction by those accepting the precious cargo. Looking up, they could have gazed at the imposing Customs House, designed by Christopher Wren after the Great Fire of London. Unburdening the ship

[2] The artist, Samuel Scott (1702-1772), was working within a burgeoning tradition of depictions of port scenes, made famous by the Italian artist, Canaletto, whose views of Venetian water port scenes were exceptionally popular in the mid-18th century. Esteem for similar scenes of London grew when Canaletto moved to England in 1745 and began to paint English subjects. Throughout this chapter, I detail the ways in which knowledge of trade and shipping spread around Europe and the colonies, and how they were vital to the development of commercial activities. Visual culture echoes this trend: the movement of people, skills and expertise, alongside growing international demand, were integral to the efflorescence of both industries.

[3] PRO CUST 3 3-5.

of her contents, their hands would rub the rough wood of the barrels. Every so often, these men would have wiped these hands on their clothes, as they grew ever stickier. Sugar barrels were wont to leak their contents.

A variety of smells would have reached the sailors' nostrils. The most astringent would probably have been the pungent scent of fish, sold at the market nearby, but others would have cut through too. On the wind, these men might have caught a whiff of exotic spices – cinnamon, nutmeg, pepper – escaped from their containers. The sugar itself would emanate a rich and fruity scent, especially the molasses and the semi-processed muscovado. If the seamen had breathed in deeply, perhaps out of exertion, the suggestion of smoke would have met them. A few streets over, the sugar refineries would have been aglow, burning coal to boil the sticky brown sugar in huge copper vats and transform it into highly-prized refined white sugar.

It is this activity with which the following chapter is concerned. Its world is the energetic, sometimes frenetic, portside of the seventeenth century. It draws upon two pieces of source material familiar to economic historians, the 'Book of Tables' and the 'Inspector General's Ledgers', which date from the 1660s and 1690s respectively.[4] These manuscripts record imports and exports through London and England. The records have been used extensively in previous scholarship, but in this chapter, I turn to them anew and re-calculate the figures for trade in sugar. Most specifically, I engage with Ralph Davis's scholarship. In two influential articles, Davis used the records to estimate the total volume of trade into and out of England, and included sugar in his calculations.[5] I follow Davis' conventions when calculating trade in sugar so as to retain comparability.

Using these data, the chapter traces how the sugar trade and industry in England changed across the period 1663-1701. I make two specific interventions into our understanding of seventeenth-century trade in and consumption of sugar. Firstly, I examine the growth of the sugar refining industry in England during the seventeenth century, which has not been fully investigated. In Chapter One, I explained how there remains room in the historiography for a

[4] BL Add MS 36785 and PRO CUST 3 3-5.
[5] Ralph Davis, 'English Foreign Trade, 1660–1700', *Economic History Review* 7:2 (1954) pp. 150-66 and Ralph Davis, 'English Foreign Trade 1700-1774', *Economic History Review,* 15:2 (1962) pp. 285-303.

study which considers consumption of sugar in the seventeenth century, during the time when sugar turned from luxury to commonplace. In this chapter, I begin this project and show that more sugar was coming into England during the seventeenth century and that more could have been eaten by ordinary consumers. Moreover, such shifts in consumption patterns are important for our understanding of the Atlantic economy as a whole and England's role within it. Sugar was shipped into England in a variety of different forms, at various stages of refinement during the second half of the seventeenth century. All of these different types of sugar achieved different prices and commanded different taxation rates. Over this period, the type of sugar being imported changed. The country imported less refined white sugar but more unrefined brown sugar which could then be refined domestically. As such, by the end of the century sugar had changed from a luxury import to a domestic manufacture. The sugar refining industry created a number of backward and forward linkages and I argue for its role in shaping the British domestic economy, as well as showing that more sugar was available to consumers. The figures remain quite small: Sugar makes up 5% of imports, exports and re-exports of goods recorded in the customs ledgers from 1699-1701.[6] Annual *per capita* consumption sat at around 4lbs in the 1660s, and 7.4lbs by the turn of the century.[7] Nevertheless, my research adds fine-grain detail to the narrative of economic change in England in the centuries that led to the Industrial Revolution. As the domestic sugar refining industry grew, it moved processing many miles across the Atlantic from the site of production in the West Indies, and in doing so encouraged a number of subsidiary domestic industries such as the coal, copper and coopering industries. It also had positive impact on the grocery sector.

Secondly, I survey the country's role as sugar-supplier. The period 1660-1701 is distinctive as a time when England's sugar market faced outwards onto the rest of the world. By 1700, England had ascended from minor player in the Atlantic sugar-trade to become a sweet shop for the rest of Europe, not only processing sugar for home consumption, but shipping it out to foreign markets as well. Drawing, albeit more briefly, on statistics compiled by Elizabeth Boody Schumpeter, I finish the chapter by looking forward into the first two decades of the eighteenth century for comparison. During this period, the home market became more important and the proportion of exports dropped.

[6] Davis, 'English Foreign Trade', p. 151 and PRO CUST 3 3-5.
[7] I look at *per capita* consumption in more detail in the following chapter.

I.ii Chapter Structure

The key material for this chapter comes from only two manuscript sources but the level of detail provided by these trade statistics enables a reassessment of seventeenth century trade in sugar. Consequently, it is necessary to provide a relatively large amount of contextual information and explanation. The chapter is divided into three sections. *Section II* introduces and describes the source material in detail. It explains how the two sets of official statistics have been used by previous historians, and indicates how I use them in a new way. *Sections III* and *IV* then turn to the data mined from these sources.

By looking at the different types of sugar traveling in and out of the country, *Section III* analyses seventeenth-century domestic sugar refining in detail, with the aim of shedding more light on the industrial activity to which slavery and the products of enslaved labour made an essential contribution. While not a 'factory', a sugar refinery was the sort of energy-intensive industry which provided a model for later industrial practices. This new understanding of the economic role of sugar refineries contributes to current discussion of Eric Williams' *Capitalism and Slavery.* As I discussed in Chapter One, Williams' thesis argues for the importance of slavery to British economic development. Williams did discuss sugar refining in *Capitalism and Slavery*; however, he dates it to the eighteenth century.[8] Here, I reframe the chronology of the industry, demonstrating that it was more widespread by 1700 than Williams allowed for, and had wide-ranging economic effects which spread across the country.

In *Section IV*, I use the trade statistics to look at England's trade in sugar with foreign markets. The sugar industry did not grow in a national bubble, hermetically sealed, and insulated from foreign markets. The Navigation Acts ensured a hungry and willing home market for sugar, and taxation policies buttressed re-export trade into Europe. A complex repayment system was introduced, whereby importers of sugar could claim a rebate for re-exported goods. Some of the import duties they had paid when the sugar arrived from the colonies would be repaid when the sugar left the country again. Brown sugar arriving from the colonies would pay an import duty, but if it was shipped out again, the merchants would receive a rebate.[9] Intra-European competition and trade were important to growth and

[8] Williams, *Capitalism and Slavery*, pp. 73-77.
[9] Ralph Davis, 'Rise of Protection in England, 1689-1786', *Economic History Review*, 19:2 (1966) p. 312.

England traded sugar with the rest of Europe. As Nuala Zahedieh has shown, in the period after the Restoration but before the Glorious Revolution, English merchants worked in a 'relatively competitive' European environment which allowed trade to flourish.[10]

Section IV therefore builds on Zahedieh's work, which looks at the range of goods traded through London and at the merchants who traded them, and focusses on sugar imports and exports and their geographies. It develops Zahedieh's arguments by looking not only at London, but also at the outports around England. While this chapter does not focus as extensively on the colonial export market as Zahedieh does (very little sugar was shipped back to the Caribbean), it does explore the way in which English sugar was shipped out into Europe. This is a novel way to approach the data we have to hand. It explores the early role of England as a supplier of sugar to Europe, and the findings speak to the fluctuating balance of economic power in the European Atlantic world over this time. The seventeenth century was a period when the English sugar trade was still in flux and interlinked with that of Europe. I end the chapter by looking forward into the eighteenth century, and show how Britain subsequently turned away from Europe to focus on the domestic market.

Sections III and *IV* offer a new systematic analysis of the official trade statistics which record imports and exports of sugar over the second half of the seventeenth century and a discussion of what they tell us about the growth of the early sugar industry and the sugar trade. My new work in this chapter shows that the industry was a capitalist enterprise, connecting growers, manufacturers and consumers in a geographically expanding web, which crossed countries, oceans and continents. The extraction of sugar in the colonies, supported economic expansion in the metropole. Before I turn to these more extended discussions, however, I give an overview of the source material employed, and some of its strengths and pitfalls.

[10] Zahedieh, *The Capital and the Colonies*, p. 16.

Section II Source Material

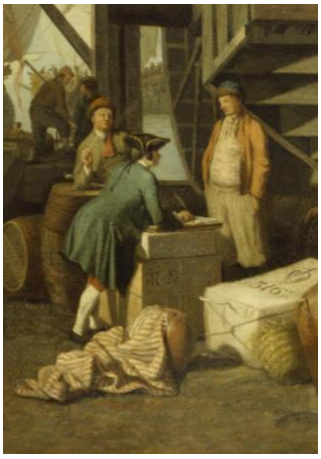

Image III Detail from Samuel Scott, *A Thames Wharf*, ca. 1757 (Victoria & Albert Museum).

If we turn back to the lively site of London's customs quay and especially the man in the blue frock coat, shown in detail in *Image III*, we get a glimpse of the sort of source material this chapter draws upon to forge its arguments about sugar refining and sugar trade. The blue-coated official, with his back to us, is recording the nature of the imports that have recently arrived in London by ship. His helpers nearby are opening up the barrels to inspect the goods. These gentlemen and their colleagues, and their seventeenth-century equivalents are key to this chapter. Customs officials would record the cargo of every ship entering the port, logging the quantities of each separate good along with its value and the rate at which it should be taxed. These records would then be consolidated annually, along with the export and re-export figures, to document the nation's balance of trade. This was a complex process that became far more established and consistent as the Customs Office developed during the eighteenth century, when the painting was created. For our time-period, the second half of the seventeenth century, the data is more uneven. Indeed, it is widely acknowledged that the extant data tracking imports into English Ports during the seventeenth century is scarce and fragmentary. Our understanding of exactly what goods were entering the country and what goods were leaving it over this time period, therefore, can only be at best an approximation. Nevertheless, as I say above, there are a small number of extant commercial statistics dating from the seventeenth century. These surviving data do provide a useful yardstick by which we can analyse some major trends. In this chapter, I revisit these records to track trade in sugar specifically. I return to the 'Book of Tables' in the British Library and the 'Inspector General's Customs Ledgers' in the National Archives and explore how this material can be used more comprehensively. Essentially, this means analysing the data at a much more granular level.

As is well known, the most significant work on these manuscripts has been done by Ralph Davis in 'English Foreign Trade'.[11] I follow Davis's chronology when reproducing the

[11] Zahedieh also breaks down the figures in terms of variety, but only looks at sugar coming from the Caribbean. (Zahedieh, *The Capital and the Colonies*, p. 188.) Richard Sheridan also lists sugar imports and exports for this time period, drawing on John Macgregor's *Commercial Statistics*. Sheridan's figures are used by Carole Shammas in her calculations of *per capita* consumption in *The Pre-Industrial Consumer in England and*

figures but rather than aggregating all the figures for sugar together, as Davis does, I look at the different types of sugar and the individual countries involved in the trade. I also look at the volume of sugar entering and leaving the country, as well as the amount in terms of its value. This gives us a much more refined understanding of the changing nature of the sugar trade and industry.[12] For the period 1700-1720, I rely on Schumpeter's reproduction of the customs figures.

II.i The Book of Tables

There are two sets of figures from the 1660s which are found in a notebook known as the 'Book of Tables', compiled in the 1670s on an order from the House of Lords.[13] This volume contains the information on imports and exports through London for the years Michaelmas-Michaelmas 1662-3 and 1668-9. It lists both the amounts and the values for the goods. According to Davis, the figures in the notebook were likely extracted from the customs ledgers in 1669-70 but the book itself was 'probably compiled some years later'. The notebook includes it a return for Customs Revenue for 1676-7 at the end, and therefore it can be surmised that the tables in their final form, with valuations, date from 1678.[14] The amount of smuggling which took place during the period, however, means that it is likely the volumes of the goods entering England were greater than recorded in the notebook.[15] It is also unclear what prices were used to calculate the values. Davis suggests that the final values were calculated using current London market prices, which means, he suggests, that the value of the goods was inflated by some margin because of duty, freight costs, and merchants' profits.[16] He does not see the valuation of sugar as substantially affected however. The sugar products listed in this book are refined sugar, English refined sugar, sugar candy, loaf sugar, white sugar, brown sugar, muscovado sugar, molasses, and panell sugar, all types of sugar at different stages of refinement. [17] Although the information provided by the book is

America. There are some problems with these however, which I consider later in Chapter Three and Appendix B.

[12] For ease of comparison, I have reproduced Davis' numbers for trade in sugar in Appendix A. In this table, I also include my own interpretation of the data from the customs ledgers.

[13] Davis, 'English Foreign Trade', p. 155.

[14] Davis, 'English Foreign Trade', p. 155.

[15] John J. McCusker, 'The Current Value of English Exports, 1697 to 1800' *The William and Mary Quarterly*, 28:4 (1971). p. 612.

[16] Davis, 'English Foreign Trade', p. 157.

[17] I describe the process of refining in much more detail below pp. 62-66. Refined sugar was sugar which has been boiled to remove impurities, turning it white. When it was described as 'English' refined sugar, this meant the refining process took place in England. Loaf sugar was white sugar in the form of a conical loaf. Muscovado and Brown sugar were semi-processed, and therefore were much darker, and have a heavier, wetter, consistency.

somewhat opaque, the figures do provide an important benchmark for the volume of recorded trade in London during the 1660s.

There are fragmentary statistics for the years between 1669 and 1696, for example in the Board of Trade Papers and the Walpole Manuscripts.[18] It would be possible, Davis argues, to fill 'the blank' drawing on the Port Books, locally created records of customs duties paid on overseas trade. However, it is universally accepted that this would be a monumental task. A report from 1696 maintained that it would require the work of four men, full time, to process each year of the information, and even then, there would be gaps and inconsistencies.[19] In various publications, Nuala Zahedieh has delved deep into one year of the records, 1686, which can be directly compared with the Book of Tables and therefore provide a good midway comparison between the two sets of years.

II.ii The Inspector General's Ledgers

By 1696, things had improved. The King appointed William Culliford, an experienced customs-man from Dorset as 'inspector-general of imports and exports, for detecting frauds and debts' with an annual income of £500. His responsibilities were laid out clearly in his instructions. He was to keep 'a particular, distinct, and true account of the importations and exportations of all commodities into and out of this kingdom'.[20] T. H. Breen makes the important point that while Culliford might not have viewed himself as a great innovator, 'collecting data of this sort for the purpose of informing government policy had no real precedent. These imposing registers represented a bold attempt to bring quantitative precision to the nation's balance of trade'.[21]

Culliford worked with a small team to systematically gather the information pertaining to the international commercial activities of England and Wales. Their findings formed the basis of a set of enormous ledgers, begun in 1696, known as 'The Inspector General's Ledgers'.

Sugar candy was akin to our boiled sweets. Molasses was a by-product of sugar processing and was a dark sticky treacle. Pannell sugar was an extremely cheap form of sugar made from boiled molasses. I have regrouped these various types into broader buckets: White (loaf, candy and refined), Brown (muscovado, brown, pannell) and Molasses.

[18] See, for example, CO 29/ 2, 138 /2 & CH (H) 80/74

[19] Davis, 'English Foreign Trade', p. 155.

[20] David Hayton, Eveline Cruickshanks, and Stuart Handley, *The House of Commons, 1690-1715* (Cambridge: Cambridge University Press for the History of Parliament Trust, 2002) p. 802.

[21] Breen, *The Marketplace of Revolution,* p. 69.

These figures improve upon those from the 1660s as they include information for both London and the out-ports, and they list the re-export figures.[22] There is a different volume for each year, and trade was recorded separately for London and for all other English and Welsh ports (outports) in aggregate under 4 headings (Imports, Exports of English Manufactures, Exports of Foreign Manufactures in Time, and Exports of Foreign Manufactures out of Time). Under these four headings each country and colony is listed individually. While we do not know precisely how the values from 1660s were calculated, these ledgers are much more informative than 'The Book of Tables'. Culliford wanted them to reflect market values and therefore valued the goods using current prices. Imports were valued at 'the current price abroad' and exports 'on the current price at home'.[23] Both the volume and the value of the goods are given and I have referred to both of these when making my calculations.[24] It must also be noted that the prices recorded in the ledger only reflect the fixed price at port at one point in time and it is unknown what the precise relationship they had to actual market prices when sugar was sold in individual shops and stores. Using the figures for unrefined sugar coming into the country, and those for English refined sugar leaving, it is possible to identify how much sugar was processed in England, and shipped out as an English manufacture. As such, the figures can tell us about the scale of the refining industry in England.[25]

In this chapter, I am in dialogue with the work done by Davis, and therefore I also take three years from the end of the century, 1699-1701. Davis suggests these provide the best point of comparison with the years from the 1660s. Both were times of relative peace and moderate prosperity. Furthermore, the volumes for 1699-1701 are the first in the series where the year-on-year calculations are recorded for precisely the same date across a number of years (Christmas Day to Christmas Day rather than Michaelmas to Michaelmas or Michaelmas to Lady Day). The varieties of sugar recorded in these volumes are again refined, English refined, loaf, white, brown, muscovado and molasses.[26]

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[22] Re-exports are goods which arrive at port and then are shipped out again to foreign markets. They do not undergo any processing. In the case of sugar, as we see in later sections, this means shipping sugar from the plantations without processing or refining it further in England.
[23] Zahedieh, *The Capital and the Colonies,* p. 9.
[24] It must also be noted that I do not use the prices for the sugars which are also included alongside the entries. These prices were given as a range rather than a precise figure and do not change much over the time considered. When calculating value of trade, I rely on the pre-calculated figures recorded in the book.
[25] It is probable that figures for London are more likely to be accurate than those for the outports. There was greater oversight of London shipping and more developed customs infrastructure. The port was also closer to the site of the compilation of the records. Other ports statistics had to be collated at a greater distance.
[26] I am dealing with total sugar products and therefore distinguishing between the different types is not deeply significant for my broad calculations. However, it is worth noting that the labels given to the different types by

II.iii Change over time

Before looking in detail at these two sets of national statistics, we should acknowledge the limits of their usefulness. As the data are not continuous - nearer two snapshots than a fully defined picture - they cannot capture the volatile and unpredictable world of the sugar trade during this half century. It goes without saying that the trade did not develop in a particularly linear way. There would have been many peaks and troughs and numerous factors affecting the volume of trade, most significantly the weather in the Caribbean. Bad weather, storms, natural disasters like hurricanes and earthquakes, all would have disrupted the harvest of sugar, its subsequent shipments and the eventual market price.[27] The English state's mercantilist policies also dictated where the shipments could come from and go to, and at what point they were taxed. Perhaps the most important limitation of the specific numbers used in this chapter are the high volumes of English refined sugar which were shipped in in the post-war years. Davis argues that 1697 saw the close of hostilities in the 9 Years War, choosing 1699-1701 as sample years would allow for the restoration of normal trading conditions.[28] However, the export figures for English refined sugar in 1699/00 and 1700/01 are still massive outliers in the general trend.[29] Previous years' harvests had sat in warehouses until the conflict abated and shipping routes cleared. When considering the volumes of trade post 1701, we see the numbers drop again. It is also for this reason that, in my final section, I reproduce Schumpeter's numbers for the first two decades of the eighteenth century, to give a more detailed picture of long-term trends. However, I argue that the high numbers for English refined sugar are still interesting to consider, as they given an indication of how much sugar could be refined over the several years of the conflict.

The trade figures used by Davis and myself, therefore, only provide a statistical skeleton for seventeenth-century trade. Fortunately, this can be fleshed out with qualitative information

customs officials are thought to be inaccurate and over-represent the amount of unprocessed sugar coming into the country. Unprocessed sugar was subject to a lower tax than processed and thus merchants would often pass off their white sugar as brown to avoid paying high duties. This is important for a discussion of *per capita* consumption however, is always inflected by how widely a good is spread through the whole of society. Knowing that there was a variety of sugar at a variety of different price points is key to understanding how more people were able to eat it. See McCusker, *Rum and the American Revolution,* p. 883.

[27] Sheridan, *Sugar and Slavery*, p. 390 and 'Captain Langford's Observations of His Own Experience upon Huricanes, and Their Prognosticks. Communicated by Mr. Bonavert', *Philosophical Transactions of the Royal Society*, Vol. 20 (1698) p. 408.

[28] Davis, *'English Foreign Trade'*, p.156

[29] See below p. 118 and *Table 6*

for the in-between years and I do this in Chapter Three. They are nevertheless useful as benchmarks, bookending the time period under consideration, I disaggregate the figures by country to explore the geographical spread of the sugar trade. Read together, these sets of calculations give a clearer understanding of sugar's and sugar refining's role in the seventeenth century imperial economy.

Section III Trade Statistics and Sugar Refining

Image IV Sugar Refining in Brazil taken from Willem Piso, *De medicina Brasiliensi libri quatuor* (1648)

III.i Sugar Refining up to 1660

Before I turn to the trade statistics, and what they can tell us about the evolving industry in the second half of the century, it is useful to understand the actual process of refining: how sugar cane is turned into the white crystals with which we are familiar, and the ways in which sugar refining took place in the years leading up to mid-century, when we encounter our first set of trade statistics. As with the knowledge of harvesting the crop, discussed in Chapter One, global interactions and international knowledge exchange are key to this early industry. The English relied on information and 'know-how' from pre-existing Dutch and Portuguese

industries in order to develop their refining and processing techniques.[30] Throughout this chapter, we see the ways in which other countries influenced and contributed to the English sugar industry, demonstrating how the Atlantic World, as David Hancock has written, was founded on a 'dense, integrated, inter-imperial set of social, economic and cultural institutions'.[31]

Growing sugar was a labour- and capital-intensive industry.[32] In the previous chapter, I described how it was grown and milled. But the juice, the product of the milling, required further processing before it assumed the various forms fit for trading and consumption. *Image IV* is an image from a book of Brazilian medicine written by the Dutch naturalist Willem Piso. It gives an indication of how sugar cane juice was boiled repeatedly and turned into processed crystals. The best contemporary description comes from the author Richard Ligon who visited Barbados in the 1640s and recorded, in immense detail, how sugar was boiled and cured on the island.[33]

Almost immediately after the plant was harvested and milled, the juice was boiled to prevent souring. It was ladled through a series of clarifying copper pans and boiled in each one. At each point scum was removed, and the sugar became more and more pure. It was then tempered with oil, so as not to become tough (turning into something like boiled sweets). This was an exceptionally laborious and dangerous process and required considerable skill. There are a number of contemporary accounts documenting the injuries that enslaved workers sustained whilst carrying out this task.[34] Eventually, after it had been through between five and eight copper pans and cooled, the liquid was siphoned off and poured into inverted pots with a hole in the bottom. As the sugar cooled and dried further, molasses flowed through the hole and was taken away to be packaged and shipped separately, or made into rum. After a month, the muscovado sugar remaining was deemed ready for shipment and

[30] Zahedieh discusses the ways in which Dutch capital was less important to the English development of sugar plantations than has been previously argued. However, she maintains, along with Menard in *Sweet Negotiations*, that Dutch knowledge and instruction were important for the English. See Zahedieh, *Capital and the Colonies*, p. 212 and Russell M. Menard, *Sweet Negotiations; Sugar, Slavery and Plantation Agriculture in Early Barbados* (Charlottesville VA., UVA Press, 2006) pp. 39-65.
[31] David Hancock, *Oceans of Wine* (New Haven, Yale University Press, 2009) p. xxii.
[32] Richard Ligon estimated it would cost one thousand pounds to set up a plantation in Barbados in the 1650s. Richard Ligon, *A True and Exact History of the Island of Barbados* (London, 1657) p. 109.
[33] The following description is taken from Richard Ligon, *A True and Exact History of the Island of Barbados* (London, 1657).
[34] Ligon, *True and Exact History,* pp. 90-91 and Littleton, *The Groans of the Plantations,* p. 20.

sale. It was taken to the 'knocking room' and the pots knocked hard against the ground, forcing the sugar free from its mould 'as a bullet out of mold'.[35] At this point, there would be three separate sections to the cone, all of various colours. The top part would be a light in colour (described by Ligon as a 'frothy light substance'), and the bottom much darker, still replete with molasses.[36] These two sections were removed and taken to be boiled again to make panel sugar, the cheapest form, which very rarely made it back to Europe.[37] The middle section, which was more than two thirds of the entire pot, was taken to a storehouse where it would be packaged and subsequently exported as semi-processed muscovado.

Some white sugar was also made on the island. This was a lengthier and somewhat more complicated process. A mixture of clay and water, with the consistency of 'frumenty or Pease-pottage', was added to the top of the moulds and they were then stored in the curing house for four months instead of one.[38] The clay would filter downwards through the pots, in doing so encouraging more of the remaining molasses to flow out of the sugar as well. This would leave the sugar almost entirely white. It was then packaged and sold as before, this time achieving a far higher price. Creating white sugar also halved the volume of the finished good, which translated into reduced freight rates.

Although Ligon described this process from his vantage point in the Caribbean, not all refining took place on the plantation. The first stages in the processing had to be done close to the cane fields in order to keep the cane from spoiling but sugar could be exported to Europe after any of the subsequent stages of refinement. Once arrived at its destination it might then be further refined domestically, using the same techniques.

[35] Ligon, *True and Exact History*, p. 92.
[36] Ligon, *True and Exact History*, p. 92.
[37] Ligon, *True and Exact History*, p. 92 and Strum, *The Sugar Trade*, p. 157.
[38] Ligon, *True and Exact History*, p. 92.

Image V Plate from Denis Diderot, *Encyclopédie* (Paris, 1751-72).

Refining was not a scientific, industrial process, perfected in the metropole and exported to the colony, rather knowledge and expertise flowed in a more circuitous fashion. Early European refining took place in Amsterdam and Antwerp but industrial techniques were developed in the colonies, mostly in Dutch and Portuguese Brazil, and then fed back to the European metropole. Despite other technological advances, sugar-refining techniques did not change much for the next century. The scale of the operations did grow however without increased labour demand; refiners were easily able to reap economies of scale.[39] The main visual sources we have for the activity come from Denis Diderot's *Encyclopédie,* first published in editions between 1751 and 1772. His plates include depictions of sugars waiting in the curing house in inverted moulds (*Image V*).[40]

III.ii The Growth of Domestic Refining in the Seventeenth Century

The trade statistics recorded in the Book of Tables and the Inspector General's Ledgers speak to the development of the English refining industry after 1660, as Dutch primacy in Atlantic sugar dwindled and sugar came increasingly to London directly rather than through the entrepôts of Amsterdam and Antwerp.[41] Legal records show that the English were already engaged in the commercial refining of small amounts of sugar in the 1590s.[42] There was a surge in refining in London at the turn of seventeenth century, motivated by the capture of Iberian ships by Elizabethan privateering.[43] An early example of a refinery can be found in Stowe's 1598 *Survey of London*, which recorded that the old residence of the Bishop of

[39] Zahedieh, *The Capital and the Colonies,* p.220.
[40] Strum, *The Sugar Trade*, p. 158.
[41] As Dutch trade in the West Indies dwindled, it began to import more sugar via England. See Jonathan Israel, *Dutch Primacy in World Trade,* p. 265.
[42] For example: 'Queen Elizabeth – Volume 245: July 1593', in *Calendar of State Papers Domestic: Elizabeth, 1591-94* ed. Mary Anne Everett Green (London, 1867) pp. 359-364. (See below p. 101 for discussion of this case.)
[43] Strum, *The Sugar Trade*, p. 215.

Hereford on Old Fishstreet Hill had been divided into 'many small tenements; the hall and principal rooms, are a house to make sugar-loaves, etc.'.[44] There was certainly a well-established sugar house in Ipswich by 1617, as testified by the set of meticulous accounts describing the sugar-related activities over the years 1617-20, known as the Blois account book.[45] And in June 1654, the diarist John Evelyn visited Bristol. Recording the visit later, he noted that it was in this city that he 'first saw the manner of refining sugar and casting it into loaves'; indeed he 'had a collection of eggs fried in the sugar furnace, together with excellent Spanish wine' while visiting at the refinery.[46] His meal was actually a very efficient one, as egg whites mixed with lime were used in the refining process.[47] Nevertheless, despite this early activity, the domestic industry did not accelerate until production in the British Caribbean islands took off in the latter part of the century, as the English perfected the techniques of producing the cash crop and trafficked more enslaved Africans to farm the cane.

With this background in mind, we can now turn to look at my reproduction of the official trade statistics for the seventeenth century. As noted above, these figures have been considered before by Ralph Davis and in Appendix A, I reproduce Davis's figures along with my own to allow for a detailed comparison. The total figures are broadly similar. Nevertheless, Davis does not fully break down the numbers by variety of sugar, and port location, thus their usefulness for tracing the development of the domestic refining industry is recognized here. The customs documentation of the flows of sugar in and out of the ports illustrates the development of the industry between the 1660s and the end of the century. *Table I* breaks down the import, re-export and export numbers by variety of sugar and *Table 2* shows these figures as percentages. Re-exports are goods which are shipped to foreign ports (without any additional refinement taking place in England). Exports are domestic manufactures; in the case of sugar products in the seventeenth century, this meant sugar which was imported and then refined in England. Consequently, molasses could also be an export, as it was produced through domestic refining industry.

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[44] John Stow, *A Survey of London*: *Written in the Year 1598* (London, 1598)
[45] The level of detail in found in these records mean that they are also illuminating for later years. See: HA30/787/3/(a).
[46] William Bray ed., *The Diary of John Evelyn* (M.W. Dunne, New York, 1901) p. 286.
[47] The Ipswich refinery records many purchases for eggs, as many as 460 at a time. This proved to be contentious, a petition to parliament asking for refining to be regulated in 1593 argues that the industry drove up the price of eggs for ordinary consumer. See: below p. 86 and 'Queen Elizabeth – Volume 245: July 1593', in *Calendar of State Papers Domestic: Elizabeth, 1591-94*, ed. Mary Anne Everett Green (London, 1867), pp. 359-364.

These figures are challenging to parse when seen in isolation, therefore *Figures 1-14* visually demonstrate how the percentage breakdown of trade changes over this period. As with the rest of the graphs in this chapter, they are colour-coded: white sugar shown in silver, brown sugar in gold and molasses in navy. The most important point to draw from the data is that the amount of white sugar imported declined over these years while the amount of brown sugar imported increased. This shift demonstrates that England was developing a domestic refining industry: it no longer needed to rely on refining elsewhere, whether in Amsterdam and Antwerp or in its own Caribbean colonies, to source its white sugar.

It is important to note here that the only available figures from the 1660s are from London alone, and from 1699-1701 we have them for London and the outports, which added together give the total for the whole of England.[48] Below (p.87) I consider the importance of London in more detail. Here, first, I look at the total figures in more general terms comparing London figures with England to track the large-scale changed over the period.

[48] Davis estimates that the ratio between London and the outports remained consistent over this period. Using the 1699-1701 ratio between London and the outports, we can therefore calculate an estimate for the total national volume of trade in the earlier period. I use this estimate when calculating per capita figures in Chapter Three.
See Davis, 'English Foreign Trade', p. 159.

Table 1 Breakdown of sugar trade London 1663/9, London, Outports and England 1699-1701

		(i) London 1663/9				(ii) London 1699-1701				(iii) Outports 1699-1701				(iv) England 1699-1701			
		W	B	M	Total	W	B	M	Total	W	B	M	Total	W	B	M	Total
IMPORTS	£000	89.79	202.93		292.71	13.76	490.57	22.84	527.17	5.42	94.13	3.80	103.35	19.18	584.70	26.64	630.52
	CWT (000)	33.54	150.18		183.72	7.51	368.20	32.87	408.58	11.18	63.43	5.46	80.07	18.70	431.63	38.33	488.65
EXPORTS	£000	2.06		29.72	31.78	30.20			30.20	1.95		0.01	1.96	32.15		0.01	32.16
	CWT (000)	0.43		39.11	39.54	10.31			10.31	0.66		0.01	0.67	10.97		0.01	10.98
RE-EXPORTS	£000					9.40	251.83	0.63	261.86	1.92	22.55	0.20	24.68	11.33	274.38	0.83	286.54
	CWT (000)					4.49	126.55	0.62	131.66	1.11	12.50	0.20	13.81	5.60	139.05	0.82	145.47

Source: BL Add MS 36785 and PRO CUST 3 3-5
Key: W – White Sugar, B – Brown Sugar, M – Molasses.

Table 1 Percentage breakdown of sugar trade London 1663/9 and Outports and England 1699-1701

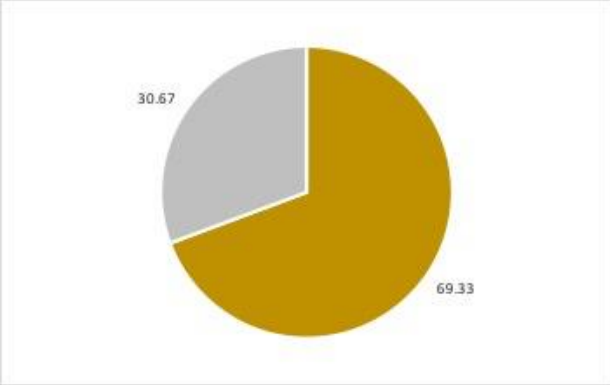
		(i) London 1663/9			(ii) London 1699-1701			(iii) Outports 1699-1701			(iv) England 1699-1701		
		W	B	M	W	B	M	W	B	M	W	B	M
IMPORTS	£000	31%	69%		3%	93%	4%	5%	91%	4%	3%	93%	4%
	CWT (000)	18%	82%		2%	90%	8%	14%	79%	7%	4%	88%	8%
EXPORTS	£000	6%		94%	100%			99%		1%	100%		0%
	CWT (000)	1%		99%	100%			99%		1%	100%		0%
RE-EXPORTS	£000				4%	96%	0%	8%	91%	1%	4%	96%	0%
	CWT (000)				3%	96%	0%	8%	91%	1%	4%	96%	1%

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5
Key: W – White Sugar, B – Brown Sugar, M – Molasses.

London 1663/6

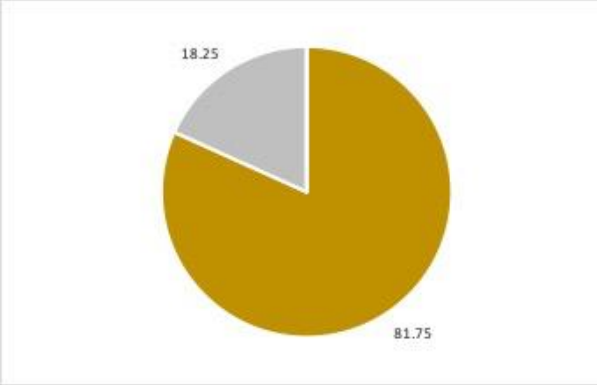
Imports:

Fig. 1



Total (£000): 292.71

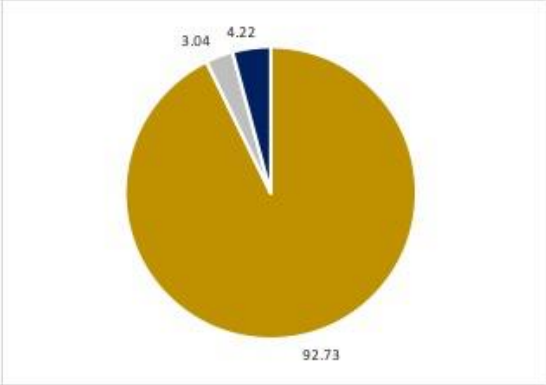
Fig. 3



Total (000 CWT): 183.72

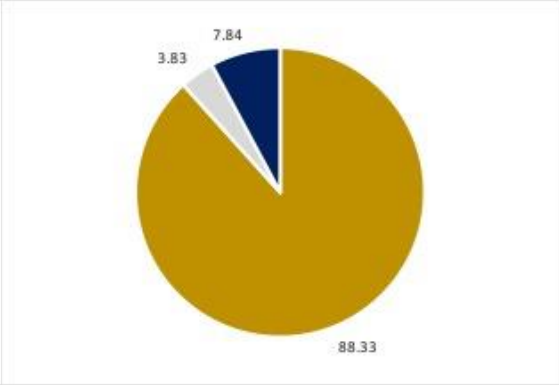
England 1699-1701

Fig. 2



630.51

Fig. 4



488.65

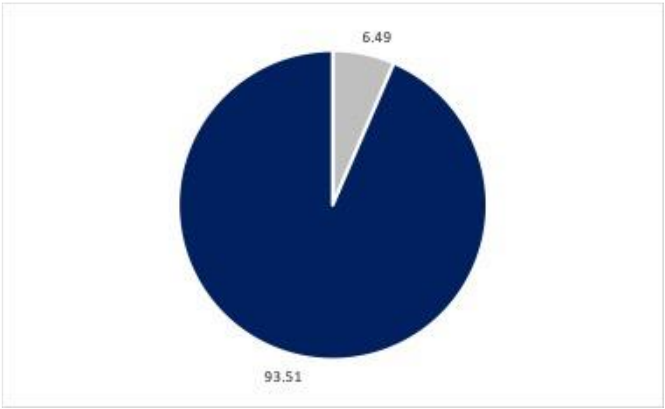
White Sugar | Brown Sugar | Molasses

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

London 1663/6

Exports:

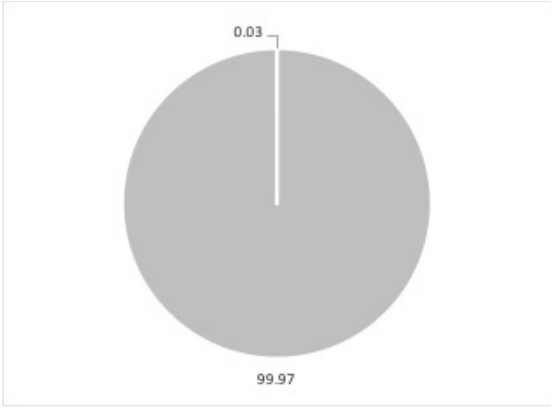
Fig. 5



Total (£000): 31.79

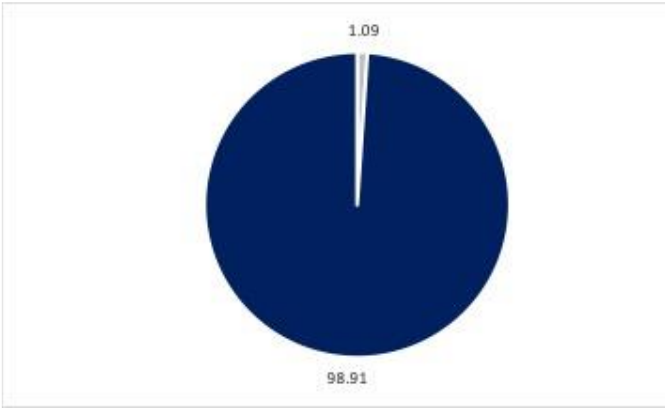
England 1699-1701

Fig. 6



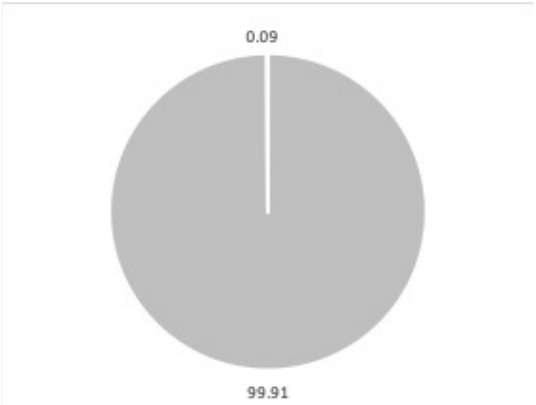
31.60

Fig. 7



Total (000 CWT): 39.54

Fig. 8



10.98

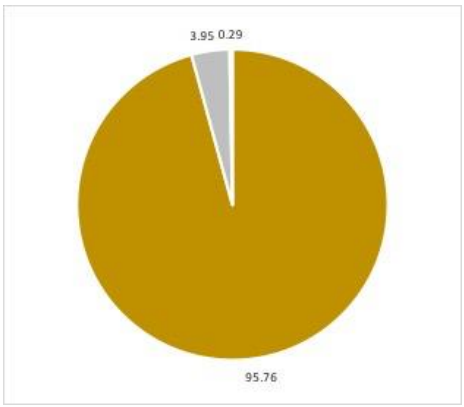
White Sugar
Brown Sugar
Molasses

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

London 1663/6 **England 1699-1701**

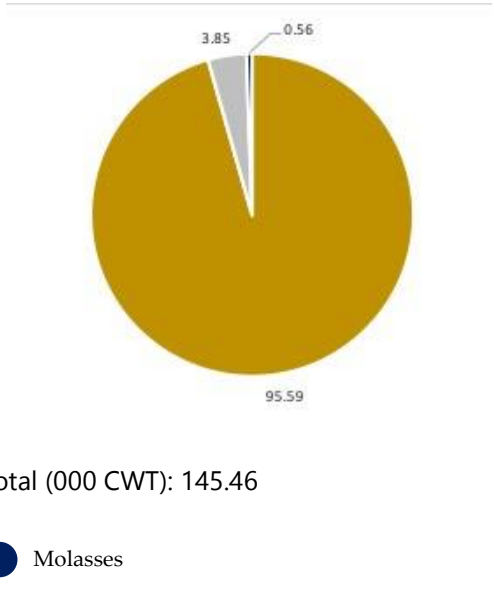
Re-Exports

Fig. 9



Total (£000): 286.54

Fig. 10



Total (000 CWT): 145.46

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

London 1663/6 **England 1699-1701**

All exports:

Fig. 11

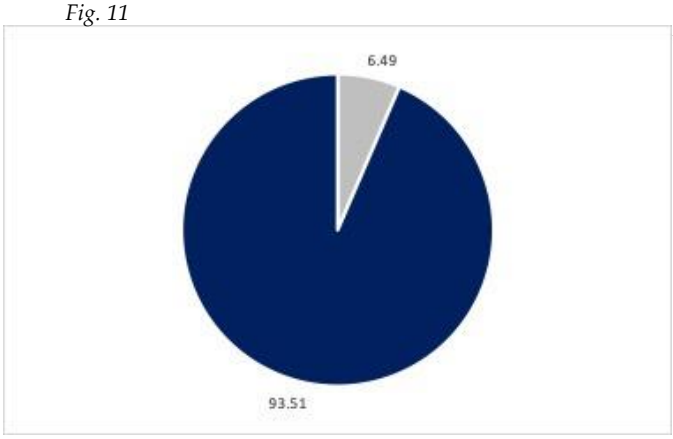
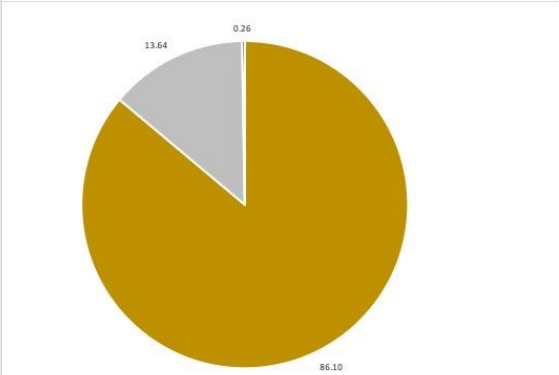


Fig. 12



Total (£000): 31.79 318.69

Fig. 13

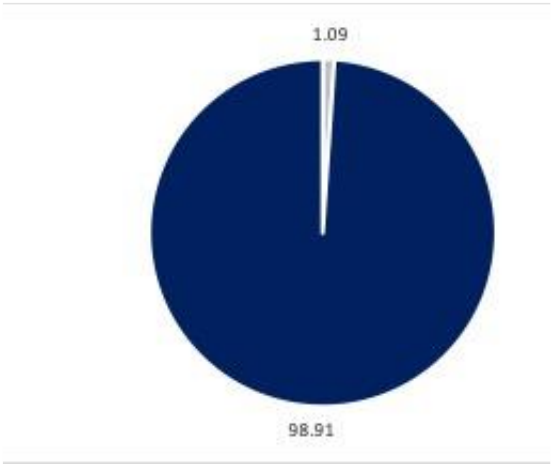
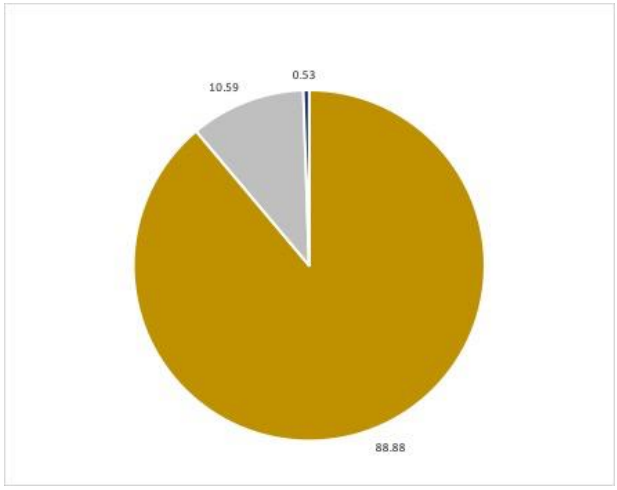


Fig. 14



Total (000 CWT): 39.54 156.44

White Sugar Brown Sugar Molasses

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

III.iii A Closer Look at the Numbers

Although two snapshots, the changes in the figures from the 1660s to the 1700s are central to understanding how the domestic refining industry progressed and matured. The changes in the import, export and re-export trade must be read together to fully understand the process. I take each of them in turn, starting with imports (the first two rows of *Tables 1 and 2 and Figures 1-4).* We must recognise that the amount of all three types of sugar imported increased between the 1660s and 1690s, hardly surprising given what we know about the development of sugar production in the islands. However, the proportional amount of white sugar being imported has also changed. It has diminished significantly, from 31% of the value to just 3% and from 18% of the volume to 4%, indicating that demand for sugar that was being refined elsewhere had decreased.[49] In accordance with this drop, more brown sugar is being imported, making up 69% of the value of imports in the 1660s and growing to 93% by the turn of the century. When we look at the percentage breakdown of the volume, the rise is smaller, from 81% of all imports in 1660s to 88% in 1690s. This is because brown sugar was a much cheaper commodity than white sugar. The official price for imported brown sugar was between 25 and 26 shillings per cwt. The official price for imported refined sugar ranged between from 30-50 shillings per cwt. It is likely that the shift to brown sugar imports happened earlier than the end of the century: Zahedieh's calculations from the Port Books for 1686, indicate that brown sugar accounted for 95% of the volume and 92% of the value of total sugar.[50] While no molasses was imported in the 1660s, by the later period, the by-product made up 4% of the value of imports and 8% of the volume. Looking at imports alone provides us with two fundamental pieces of information. Demand for imports of expensive processed sugar decreased while that for cheaper products, both unprocessed and processed, increased.

However, looking at imports in isolation provides only a partial account of the refining industry. We must also look at exports and re-exports. Exports - domestic manufactures, that is, sugar which has been imported to and then refined in England - also change over this period. In the early period, very little expensive white sugar was exported, it was predominantly cheaper molasses. The early English refineries kept their expensive refined

[49] As refined sugar is more expensive, it occupies a greater proportion by value than by weight explaining the differences in the two sets of percentages. In the 1660s, besides the English plantations, most white sugar came from Portugal, by the turn of the century, this had completely disappeared.
[50] Zahedieh, *The Capital and the Colonies*, p. 217.

sugar for home consumption and sent the cheaper by-products out to foreign markets. This relationship was completely inverted by the end of the century when the molasses exports became negligible. Molasses comprised less than 0.01% of both volume and value of national exports. and white sugar comprised the remainder.

Understanding that the English were already exporting refined sugar by the 1660s is important for our comprehension of the pace at which the sugar industry developed. English refiners realized early that they could profit from exporting refined sugar as an English manufacture, and by 1700 they had progressed so that white sugar dominated the trade. Initially the Dutch were the chief refiners in Europe but English entrepreneurs sought to develop this industry at home in an attempt to get a share of the market. These early export figures corroborate a petition written to the King by sugar refiners of London in 1661 asking to be recognized as a corporation. The petition listed a number of requests. The refiners wanted their industry to be regulated to ensure that English sugar was well-considered in other countries. They also sought protection from the crown explaining that foreign merchants, especially those from Portugal, were depressing the prices in Europe and in England. They argued that, through royal protection, England should not import foreign sugars thus enabling refiners to refine more sugar because they would have a secure domestic market for their product. This also would allow them to refine so much of the good, that they would be able export their surplus to Europe, which would be of benefit to English economy as it would employ more ships and raise more customs revenue.[51] Refined sugar was about 1.3% of the total value of English exports in 1699-1701.[52] However, as observed above, the years 1699 and 1700 were outliers. England exported significantly more white sugar during these years than the surrounding ones. Nevertheless, although these high figures distort the annual export totals, they still are important indications how much sugar was being refined over several years and being set aside to be exported.

As there are no statistics for re-exported sugar (i.e. sugar which passed through the domestic port without being processed in any way) in the 1660s, we can surmise that this trade began in the years following. By the end of the century, however, we see that the re-export trade was dominated by brown sugar, with only small volumes of refined sugar being cleared in

[51] BL Add Ms 25115, fos. 303-309.
[52] PRO CUST 3 3/5

English ports. Zahedieh suggests that these re-export figures mean that brown sugar was being produced and imported in volumes that went above home consumption, and thus the good instead 'played an important part in strengthening the national balance of payments'.[53] As with other re-exports, sugar was helping to turn London especially into a vibrant entrepôt. As I discuss below, in the years after 1700, the percentage of sugar re-exported decreased: home consumption became more and more important.

What else can these shifts tell us about the refining industry and domestic consumption in the second half of the seventeenth century? To summarize: we know that imports of refined white sugar decreased, but exports of the good increased. At the same time, imports of brown sugar came to dominate. Logically, this indicates that the domestic refining industry was evolving. The English shipped in more semi-processed brown sugar, processed it and turned it into refined white sugar and then exported the new good as a domestic manufacture. The by-product of this process, molasses, and the shifting relationship between molasses and white sugar as export items, also inform us about the changing nature of the trade and about domestic consumption. While the domestic refiners initially wanted to keep their white sugar for the home market, by the later period they were sending more out to foreign markets. Molasses exports did not increase in a similar fashion, even though more molasses would have been produced as refining accelerated. Molasses was therefore being consumed domestically, suggesting that there was considerable demand for cheaper sugar products.[54]

[53] Zahedieh, *The Capital and the Colonies*, p. 225.
[54] Molasses was principle ingredient rum, which became central to the consumption patterns of poorer English people in the eighteenth century. At this point, the English consumed less of the liquor, and from the trade records, we see that did they import it in any sizable volume. They might have, however, used the molasses produced in refining to distil the liquor themselves. This information becomes more important in the following chapter, when I look at demand for sugar products across the socio-economic spectrum. McCusker, *Rum and the American Revolution,* p. 899.

III.iv The Importance of London

Table 3 Percentage Breakdown of Total Sugar Trade in England by Type of Sugar Between London and Outports

		London 1699-1701				Outports 1699-1701			
		W	B	M	Total	W	B	M	Total
IMPORTS	£000	72%	84%	86%	84%	28%	16%	14%	16%
	CWT (000)	40%	85%	86%	84%	60%	15%	14%	16%
EXPORTS	£000	94%			94%	6%		100%	6%
	CWT (000)	94%			94%	6%		100%	6%
RE-EXPORTS	£000	83%	92%	76%	91%	17%	8%	24%	9%
	CWT (000)	80%	91%	76%	91%	20%	9%	24%	9%

Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

Table 3 shows us the importance of London for the sugar trade at the end of the century, especially as a location for exports and re-exports. Sugar exports helped to establish London's role as, what Zahedieh has termed a 'leading emporium in Europe' and they cemented London's 'hub position in England's expanding network of Atlantic exchange'.[55] London was a centre of refining and the major entrepôt. Proportionally, it exported more sugar than it imported. Interestingly, these figures also show us that outports received a greater amount of imports – especially of comparatively cheaper white sugar. 60% of the total volume of white sugar arrived outside of London, but this only comprised 28% of the total value. While these numbers are not conclusive, they do suggest several ideas about the spread of sugar around the country. London was more likely to house wealthier consumers who might pay higher rates for expensive imported white sugar. The cheaper refined sugar came through outports where there might be more appetite for white sugar given the relative scarcity of refineries in comparison to London. However, consumers with this appetite were only willing to pay up to a certain price.

Albeit on a smaller scaler, refining was also on the rise outside of London and that it was a growing industry across the country during the seventeenth century. In the following section, I look in more detail at the rise of refineries across the country and explore the effects the activity had on local economies.

[55] Zahedieh, *The Capital and the Colonies*, pp. 15 & 7.

III.v Sugar Refining in England 1660-1700

Image VI Map of Sugar Refineries in Britain pre-1700 (Source: Duggan, *Sugar for the House*, *passim* and Mawer, Sugar Refining Database.)

The trade statistics give us a good scaffolding upon which to build an argument about the rise of the refining industry. Early domestic sugar refining, and especially sugar refining outside of London, has not received extensive mainstream scholarly attention.[56] However, this burgeoning industry was significant to both England's domestic economy and its role in the wider international one and it is to these two points which I now turn, starting domestically and moving outwards to the international. As the trade figures suggest, the industry was extensive by the 1700s. The figures, which give a snapshot of two points in time, can be fleshed out for the intervening years by a range of archival sources. During this period, sugar refining blossomed across the British Isles. All the evidence indicates that sugar was a vibrant and important focus of trade over the seventeenth century and that, by 1700, sugar had become a home-grown industry. Sugar refining was a huge value-adding industry, as evidenced by the change in price between raw sugar imports and refined exports. Raw brown sugar was imported at around 25 shillings per cwt, refined English sugar was exported at 50-60 shillings per cwt.[57]

Image VI shows the locations across the British Isles where I have found evidence of sugar refineries during the second half of the seventeenth century. As the export figures confirm,

[56] This chapter draws on two pieces of invaluable local history to chart the rise of refining in England: Mona Duggan, *Sugar for the House*: *A History of Early Sugar Refining in North West England* (Stroud, Fonthill, 2013) and Bryan Mawer's Sugar Refining Database (http://www.mawer.clara.net/intro.html) and the accompanying book *Sugarbakers: from Sweat to Sweetness* (Welwyn Garden City, Anglo-German Family History Society, 2007).
[57] PRO CUST 3 3-5

London remained the central location for the industry, with more refineries than any other city. The poll tax records for 1692 record 19 refineries in the City, most situated near to the Customs Quay.[58] Other records show that areas on the outskirts were also home to at least six businesses including ones in Battersea and Vauxhall and the East End.[59] London's leadership was not so comprehensive as to completely overshadow the growth of the industry elsewhere. There were other factors which encouraged growth and expansion across the country, often when London was struggling. When the plague hit the capital in the 1660s, the intra-city trade slowed down, as did international trade in and out of the capital. Ships bound for London were instead forced to dock in Liverpool. The Liverpool Port Books for 1665 make note of a London-bound ship from Barbados which had to divert its course to Liverpool and offload its cargo there. As Mona Duggan suggests, such activity 'might have alerted Liverpool merchants to the opportunities of trading with the West Indies'.[60] The red dots on *Image VI* demonstrate the path the industry traced up the edges of the country. As might be expected, these sugar houses remained close to coasts and major waterways but covered the length and breadth of the island. Sugar refineries were built as far south as Plymouth and as far north as Glasgow, as West as Liverpool and East as Ipswich. As John J. McCusker puts it, the sugar industry had a 'defined place' among the outports by 1669.[61]

Sugar boilers were peripatetic. Rather than remain in one place, they covered the country to help establish this burgeoning trade. While they may have begun their lives in London, they criss-crossed the country in search of new opportunity. The Great Fire of London also forced many industries to relocate out of the city. Such was the fate of the renowned refiner Mr Smith of Battersea. His buildings had been destroyed by the fire and consequently in 1667, he made the journey North to Liverpool, where the trade links with the West Indies had been established only a few years earlier. The city was, moreover, well supplied with coal from nearby fields which could heat the boilers and there was a ready supply of cheaper labour.[62] Family networks and social ties were also key to sugar's spread: these refiners and their families wove a sticky web across the country, disseminating their knowledge and skill. Smith had started his Battersea refinery with a business partner John Danvers who had

[58] Craig Spence, *London in the 1690s: A Social Atlas* (London, IHR, 2000) pp. 115-118.
[59] Mawer, *Sugar Refining Database*, (http://www.mawer.clara.net/loc-westldn.html)
[60] Duggan, *Sugar for the House*, p. 27. For an extended discussion of the relationship between coal and sugar see below pp. 94 - 95.
[61] McCusker, *Rum and the American Revolution*, p. 42.
[62] Duggan, *Sugar for the House*, p. 37.

married Smith's sister, Susan. When he moved to Liverpool, Smith asked Danvers' brother, his brother in law, Daniel to join him in the venture. Meanwhile, Smith's nephew, Allyn was establishing himself as a refiner in Bristol. Allyn married the daughter of Anthony Wood, another Bristol refiner, and her two sisters also married refiners based in the south-west.[63] It was not just the heads of industry who were mobile, their labourers were also peripatetic. Mona Duggan gives the example of John Woosey, who was hauled up in front of the Lancaster assizes in the 1680s, sorely in debt. He had first been apprenticed in Smith and Danvers' refinery in Liverpool, had moved to work with the new refinery in Ormskirk and had then relocated to Chester to work at the sugar house there. His movements across the North-West suggest that sugar engineered a mobile labour force.[64] We see similar movement in the workforce of other refineries. The Lancashire refiner John Hodgson employed refiners and distillers from Bristol and London in the 1680s who knew about 'the art or mystery of it'.[65]

Sugar's effect on the economy was much greater than merely creating employment. In fact, boiling sugar, though certainly demanding in terms of skill, did not require vast amounts of labour. It was, however, energy intensive, requiring large amounts of coal. The industry forged a number of backward and forward linkages and its development had a demonstrable effect on the wider domestic economy. *Images VII* to *X* are taken from the Dutch emblem book *Het Menselyk Bedryf* or *The Book of Trades*. The volume, created by Jan Luyken and his son Caspar in 1694, depicts a variety of different trades prevalent in Amsterdam in the seventeenth century. Four of them are useful for our understanding of the importance of sugar refining. Whilst most obviously relevant to the Dutch economy, the similarities between the two countries mean that the pictures can also help us understand sugar in England. On the bottom left, we see the *Suikerbacker*, or the sugar baker himself. He holds in his arms a great loaf of sugar, recently slid out of its mould. His workers wash linens in the nearby canal, while another carries a loaf inside. The familiar chests, in which more expensive sugar was carried, are seen in the foreground and on the shop sign. It is the other three, however, the *Küper*, *Kooperslager* and the *Pasteibacker,* the cooper, copper smith and the pastry maker, which speak more to the ripple effect sugar had on the rest of the economy. Sugar and sugar

[63] Frances Nottidge Macnamara, *Memorials of the Danvers family of Dauntsey and Culworth* (London, Hardy & Page, 1895) p. 437.
[64] Duggan, *Sugar for the House*, p. 76.
[65] The grocer William Stout describes Hodgson's business in his autobiography. See J. Harland (ed.), *The Autobiography of William Stout of Lancaster* (London, Simpkin Marshall & Co., 1851) p. 67.

refining demanded copper pans, which needed to be heated by large amounts of coal. Once the sugar was refined it needed to be stored in barrels and hogsheads and it also needed to be transported to its final point of sale, and sometimes it was transfigured even further, into delicious cakes and pastries. All of these processes required the involvement of other tradespeople and their expertise. I turn to all of them briefly, beginning with copper.

Images VII – X Details from *The Book of Trades* (Amsterdam, 1694)

III.vi Sugar Refining and Copper

Copper was an appealing choice for sugar refiners as it was the cheapest form of metal which had a high melting point and high conductivity. There was always the chance that the sugar, when boiled, would burn and ruin. Copper's properties helped to mitigate that risk. By the end of the century, sugar was often boiled in large copper pans, such as the one you can see two men beating into shape in the background of the Dutch *Koopersla*ger's* workshop. Nuala Zahedieh has traced the importance of sugar refining for the copper export industry. She demonstrates the increasing demand for British manufactured copper pans in the British Caribbean Islands from 1680 to 1730. These would have been vital parts of the process of turning cane juice into semi-processed muscovados. The growth of the refining industry thus revivified a dying domestic copper trade.[66] In the 1610s, the Blois account from Ipswich does not record copper utensils, rather it appears to use lead instead. However, by the 1690s, copper was being used by domestic refiners as well. An inventory of the Whitsun Court Sugar House in Bristol, drawn up in 1690, records three copper pans worth £31 16s and three copper coolers worth £9 15s as well as copper ladles, colanders, and pipes and funnels.[67]

One of the most important developments in copper smelting was the replacement of charcoal with pit coal, which was a far cheaper source of fuel. However, coal was more likely to corrupt the final product. Zahedieh narrates the story of the inventive Clerke family and their wide network of associates and financiers, who, encouraged by the need for a cheaper fuel source, developed a furnace in Bristol in the 1680s which allowed them to smelt lead and eventually copper using coal but without corrupting the metal. This was a hugely important technological leap, that allowed commercial quantities of copper to be produced at a lower cost. Zahedieh argues that it was the growing colonial demand for copper which animated these developments, while domestic demand remained relatively stagnant until the eighteenth century.[68] In a recent article however, she highlights how, by the end of the eighteenth century, growth in the import trade led to increased use of copper by domestic industry, especially in London where copper equipment was used by sugar refiners, dyers and rum distillers.[69] Looking at the activities of early refiners reveals that such domestic demand had

[66] Nuala Zahedieh, 'Colonies, Copper, and the Market for Inventive Activity in England and Wales, 1680-1730.' *The Economic History Review*, 66:3 (2013) pp. 805–825.
[67] I.V. Hall, 'Whitson Court Sugar House, Bristol, 1665-1824', *Trans. of the B. and G. Soc.* vol. 65 (1944) p. 70
[68] Nuala Zahedieh, 'Colonies, Copper', p. 8.
[69] Nuala Zahedieh, 'Eric Williams and William Forbes: Copper, Colonial Markets and Commercial Capitalism', *The Economic History Review*, 74:3 (2021) p. 793.

long roots. The blossoming of refineries in the second half of the seventeenth century and their continued expansion into the subsequent century, suggests that the early domestic refining industry also created backward linkages and helped to encourage the resuscitated copper industry alongside the export trade to the colonies.

III.vii Sugar Refining and Coal

The growth of copper smelting using coal increased the demand for this fuel source. Furthermore, the sugar refiners themselves required large amounts of it to boil the sugars in the manufactured pans. In order to keep the sugar refining process continuous, refiners would have needed ready stocks of coal. Sugar refining on islands used wood to boil the sugar and when considering sixteenth-century Madeira, Jason W. Moore has calculated for every one kilo of sugar produced, sixty kilos of fuelwood need to be burned. Coal has about double the energy density of wood and so a rough estimate is that for every one unit of sugar, thirty of coal was required.[70]

The Ipswich refinery bought large amounts of coal regularly in the early seventeenth century, often purchasing at least 10 chaldrons or almost 13 tonnes in one purchase. In 1703, London's coal stocks were surveyed, and a sugar refiner in Southwark was found to have one of the most substantial supplies in the entire city, a prodigious 300 chaldrons or 400 tonnes.[71] Looking at inventories for London, Zahedieh has calculated that 88% of the investment in sugar refining was in stocks of sugar and coal.[72] Equally, the high price of coal was enough to deter the sugar refining industry. The construction of the Cumbrian township of Whitehaven, created to exploit the local seams of coal, ground to a halt in the 1690s due to the imposition of coal taxes. A letter sent to the owner of the town, Sir John Lowther, from a John Gale, describes how the sugar house and the glass house would be 'suppressed' if the tax on coal were to rise.[73] And it seems these industries were indeed supressed, as there is no record of a sugar house in Whitehaven until the 1720s.

[70] Jason W. Moore, 'Madeira, Sugar, and the Conquest of Nature in the 'First' Sixteenth Century: Part I: From 'Island of Timber' to Sugar Revolution, 1420–1506', *Review (Fernand Braudel Center)*, 32:4 (2009) p. 376.
[71] John Hatcher, *The History of the British Coal Industry*, 5 vols. (Oxford, Oxford University Press, 2003) Vol. I., p. 447.
[72] Zahedieh, *The Capital and the Colonies*, p. 219.
[73] Quoted in Duggan, *Sugar for the House*, p. 145.

It comes as no surprise that sugar houses were often set up next to glass blowers, soap boilers or smelters. These industries all required coal and positioning them near to each other meant that the fuel could be shipped efficiently. In Topsham, a town just south of Exeter, the sugar house was next to the glass blowers. This was the same in Gloucester, where a glass house and a sugar house were also close to each other, with the glass house perhaps being used as a sugar refinery at times.[74] The knowledge and skills of these other artisans was also drawn upon to help with the sugar industry and they were able to reap economies of scale in the transport of coal inland. The sugar refinery in Ormskirk, which was set up in the 1670s, ran a few trials using the boiling pans of a local soap boiler.[75] Robert Duplessis describes the creation of a central industrial zone within Amsterdam as essential to the city's development as a modern economy. The creation of sugar refineries alongside these other coal-reliant industries in the same geographical zone leads me to argue that sugar was allowing England to head the same way. Refineries located alongside other industries created efficiencies and central industrial hubs in towns.[76]

The relationship of coal and sugar refining is one of the most important points when considering the role of sugar to Britain's economy. Sugar refineries' use of coal provides an early example for E.A. Wrigley's influential argument that heat-intensive industries (those which relied upon the burning of coal, and thus exploited a new source of energy) were key to the industrial revolution's continued progress. Wrigley writes that in order for it to be possible for the industrial revolution to take place 'two capitalisms were needed'. The first was the capitalism of a market economy in which workers laboured in order to consume (which I describe in much more detail in Chapters Three and Four). The second was gaining access to the store of capital in the form of the energy found in coal. Burning coal meant that energy could be expended at a scale that had not previously been available and output could be considerably higher.[77] Burning coal to fuel sugar refineries was one of the first of such industrial activities. Sugar, therefore, brought Wrigley's two capitalisms together in one good. Sugar refining using coal also adds a new perspective to Robert Allen's argument about coal and the international economy. Allen argues that the explosion of the population

[74] Mawer, *Sugar Refining Database*, http://www.mawer.clara.net/loc-glouc.html
[75] Duggan, *Sugar for the House*, p. 104.
[76] Robert Duplessis, *Transitions to Capitalism in Early Modern Europe* (Cambridge, Cambridge University Press, 1997) p. 159.
[77] E.A. Wrigley, 'Energy and the Industrial Revolution', *Philosophical Transactions of the Royal Society*, 371: 1986 (2013) p. 4 and *Energy and the Industrial Revolution* (Cambridge, Cambridge University Press, 2010) p. 22.

of London 'combined with a high wage economy generated extraordinary growth in the demand for fuel in an extremely small area'.[78] He hypothesizes that the growth of London followed the expansion of international trade, and in turn drove the growth of the coal trade, finishing with the conclusion that 'the mere presence of coal was not sufficient to cause the coal trade. It was only activated by the growth of the international economy'.[79] Allen argues that the exploitation of coal happened in the eighteenth century, as the British economy became intercontinental. Seventeenth-century sugar refining shows that his argument can be re-sited backwards in time. I noted the importance of London above (p.86): London was a centre of sugar refining. Sugar refining was an industry which relied on coal and it was stimulated by the high wages and local consumer demand. Rather than the increased exploitation of coal being a side-effect of the growth of the international economy which created higher wages, demand for coal was intimately integrated into the international economy as it was needed to process a colonial good.

III.viii Sugar Refining and Shipping

Packaging and shipping sugar drew other economic agents into the mix. The cooper depicted in the *Book of Trades* would have made barrels to store the increasing volume of unrefined sugar coming into England. Despite the increasingly protectionist English state, the pots and stoneware which would have stored sugar once it was refined were not usually domestically produced. Catherine M. Brooks has gathered together the archaeological evidence of early sugar refineries and asserts that earthenware was still being shipped from Dutch and Iberian sources which was a hangover from a time when sugar came mostly from other European sources.[80] Shipping sugar around the country, however, did encourage evolving transport links. Williams noted that the Bristol refiner, Robert Aldsworth, financed the construction of quays in the city.[81] Sugar did not stay in the ports but spread inland, pulled by the sweet tooth of consumers. This was not entirely easy. For example, merchants in Lancashire, although relatively near Liverpool, found it difficult to transport goods from the port across the moorland. In response to this, John Lawson, a sugar merchant in Lancaster, constructed a wharf in the town so that West Indian ships could reach further inland bringing sugar.

[78] Robert C. Allen, *The British Industrial Revolution in a Global Perspective* (Cambridge, Cambridge University Press, 2009) p. 87.
[79] Robert C. Allen, *The British Industrial Revolution in a Global Perspective*, pp. 90-91.
[80] Catherine M. Brooks, 'Aspects of the sugar-refining industry from the 16th to the 19th century, *Post-Medieval Archaeology*, 17 (1983) p. 13.
[81] Williams, *Capitalism and Slavery*, p. 74.

Another obvious solution to the problem was to clear and deepen the Mersey which would allow small boats to access Warrington and Manchester. When the idea was first proposed in the 1660s, and a bill introduced in parliament, it was defeated by landed interests.[82] However, the campaign did not end there. In the 1690s, Thomas Patten of Warrington, a tobacco and sugar merchant, financed the removal of old fish weirs from the Mersey as far east as Warrington, clearing the path for his goods from Liverpool.[83] Warrington flourished from the improved access to Liverpool. With this development, Patten, decided that it would be cheaper to build a refinery in Warrington to refine sugar in a place closer to his customers. His sugar house complex was completed in 1717 and was seemingly successful. Daniel Defoe commented when he visited in the following decade that the sugar-houses, copper works and glass houses in the town 'furnish the Industrious with the Means of living comfortably'.[84]

Transport of sugar reveals that the sugar industry also had forward linkages. It is helpful to think of the trade as a pebble dropped in water, its influence rippling out in all directions. It was also an important source of income to the grocery sector, which flourished nationwide with the influx of new colonial goods.[85] Sugar encouraged the trade of confectioners and pastry makers, whose sweet goods sold across the country, some of which can be seen in the image of the Dutch pastry maker from *The Book of Trades*. By the end of seventeenth century, there were at least 40 confectioners in the city of London.[86] Nor were refiners confined to port cities. The 1686 inventory of John Shaw, confectioner of Chesterfield in Derbyshire, 80 miles from Liverpool, records 11 different types of sugar valued at £24 18s 7d, just under 20% of his total assets.[87] Molasses and sugar were also used in distilleries to make liquor. Sugar refiners would often diversify and invest in these industries as well. Daniel Danvers, the Liverpool refiner, had a stake in a distillery in Bolton, and John Hodgson, the first Lancastrian refiner, built a distillery alongside his refinery, as he had an interest in the wine and liquor trade.[88]

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[82] Duggan, *Sugar for the House*, p. 111.
[83] Duggan, *Sugar for the House*, p. 111.
[84] Daniel Defoe, *A Tour thro' the whole island of Great Britain,* 3 volumes (London, 1724-1727) Vol. III, p. 247.
[85] Jon Stobart, *Sugar and Spice*, *passim*.
[86] 1692 Poll Tax Database, CMH. Cited in Zahedieh, *Capital and the Colonies*, p. 222.
[87] Inventory of John Shaw, Confectioner, 1686 (Staffordshire, Dioceses of Lichfield and Coventry Wills and Probate 1521-1860, findmypast.com (Accessed Nov 2017).
[88] Duggan, *Sugar for the House*, p. 128.

III.ix The State and Sugar Refining

While the success and growth of sugar refining during this period did rely on the entrepreneurial and experimental spirit of the individual refiners and those who worked in their enterprises, (a spirit which Joel Mokyr does not see occurring until well into the eighteenth century), the industry did not lack state support. [89] Over this period, the English crown passed a series of Navigation Acts which imposed restrictions on colonial trade. These restrictions changed and developed over time but essentially, they decreed that the colonies were not allowed to trade their goods directly with other nations. All colonial goods were to pass through England before being re-exported elsewhere. As Zahedieh has argued, such legislation 'aspired to make London, rather than Amsterdam, the leading emporium in Europe'.[90]

Table 4 Duties on Sugar in England 1651-96 (shillings per cwt)

		1651	1669	1685	1698
English Plantations	**Muscovado**	1.5	1.4	3.5	2.8
	Clayed	5	4.75	11	9.5
Foreign Plantations	**Muscovado**	3	3.8	8	7.6
	Clayed	10	7	17	13.8

Source: Deerr, *The History of Sugar,* Vol. I, p. 427; reproduced in Zahedieh, *The Capital and the Colonies*, p. 216

The protectionist tariff policies of the English government enacted over the course of the second half of the seventeenth century were also an important source of encouragement. As shown in *Table 4* customs duties on non-English sugar were much higher than that produced in English colonies. Importantly for refining, the custom duties also distinguished between the types of sugar. Refined sugar was subject to a higher rate than non-refined. This greatly annoyed the planters in the islands, who argued that this did damage to their livelihoods as it discouraged colonial industry.[91] The legislation served, however, to benefit English refiners who were able to import cheaper unrefined sugar at low prices and refine it for the home

[89] Mokyr argues that the entrepreneurial scientific activity of individuals was a driving force for British industrialisation. The sugar refiners demonstrate this spirit one hundred years earlier. Joel Mokyr, *The Enlightened Economy: An Economic History of Britain 1700-1850* (New Haven, Yale University Press, 2009).
[90] Zahedieh, *The Capital and the Colonies*, p.37.
[91] These debates raged over the course of the half-century and were enumerated in various tracts and pamphlets which outlined the points of either side. See, for example, Edward Littleton, *The groans of the plantations, or, A true account of their grievous and extreme sufferings by the heavy impositions upon sugar and other hardships relating more particularly to the island of Barbados* (London, 1689).

market, selling it on as a more expensive manufacture. While the duties frustrated the planters, they effectively ensured a monopoly in the home market. This tariff structure was an important way in which capitalist industrial activity, which relied on colonial produce, came to be centred in the metropole. The taxes stymied growth in the Caribbean islands but encouraged industrialisation and commercialisation in England. England was almost unique in doing this. Portugal, for example, banned domestic refining in the hope of encouraging the industry in Brazil.[92]

III.x Sugar Refining and the International Economy

Work on the Navigation Acts has tended to emphasise the ways in which Britain protected its own economy from the vicissitudes of international trade and the importance of the creation of a domestic market. And it is undeniable that the home demand for sugar was an important stimulus for the refining industry. However, the sugar trade also had a greater international scope. Most studies of the foreign markets for English exports and re-exports have followed the example of the work of F.J. Fisher and analysed the market for English woollens and Indian textiles in Europe.[93] Others have focussed on the demand for British manufactures in the colonies.[94] The majority of these studies, focus on the eighteenth century when the British manufacturing sector was more developed.[95] The sugar trade, however, had a more complex and developed relationship with European trade and markets earlier on and it did not simply close itself off to competition after the first Navigation Act of 1651. In fact, the trade statistics analysed here demonstrate that in the latter half of the seventeenth century, England became even more intricately involved in the European market. Dunn, using figures from Deerr which I reproduced in the previous chapter (p.33) showed that the English colonies in Barbados and Jamaica and the Leeward Islands came to supply 'close to half the sugar consumed in Western Europe' by 1700.[96] Before French competition began at pace, the

[92] Strum, *The Sugar Trade*, p. 28.
[93] F. J. Fisher, 'London's export trade in the early seventeenth century', *Economic History Review,* 3 (1950) pp. 151-161. See also: David Ormrod, *The Rise of Commercial Empires* (Cambridge, Cambridge University Press, 2003) pp. 31, 181; Beverley Lemire, 'Fashioning Cottons: Asian Trade, Domestic Industry, and Consumer Demand, 1660 - 1780' in David Jenkins (ed.), *The Cambridge History of Western Textiles*, 2 vols. (Cambridge, Cambridge University Press, 2003) Vol. I, pp. 493-513 and Rosemary Crill, 'Asia in Europe: Textiles for the West', in Anna Jackson and Amin Jaffer (eds.), *Encounters: The Meeting of Asia and Europe 1500 – 1800* (London, V&A, 2004) pp. 262-71.
[94] See Zahedieh, 'Colonies, Copper' and 'London and the Colonial Consumer' and Breen, *Marketplace of Revolution* and Jonathan Scott, *How the Old World Ended: The Anglo-American-Dutch Revolution 1500-1800* (New Haven, Yale University Press, 2020).
[95] Zahedieh's work is the notable exception to this.
[96] Dunn, *Sugar and Slaves*, p. 48.

English sold their surplus into Europe. Re-export trade was also supported by the customs taxation system. Importers of sugar could claim a rebate for re-exported goods. Brown sugar arriving from the colonies would pay an import duty, but if it was shipped out again, the merchants would receive a rebate.[97] The re-export trade consolidated during this period and consequently made efficiency gains. According to research by Zahedieh, 7 merchants accounted for 83% of London's re-export trade in 1686 and of them 6 were major sugar importers and would have profited from the tax drawbacks.[98]

The export and re-export of sugar is an example of the English merchants getting rid of surplus and undercutting competition from their neighbours, and in doing so strengthening the nation's balance of trade. In *Section IV*, therefore, I break down the trade statistics by country to take a closer look at role of the English in the international market for sugar. Before doing this, however, I sketch out the intra-European trade in sugar in the years leading up to the 1660s.

Section IV Trade Statistics and International Trade in Sugar

IV.i Sugar and Europe before 1660

Before England began to expand its refining industry, the European market was dominated by the Dutch and Portuguese, who supplied the continent with sugar. As described in the previous chapter, it was they who developed and perfected the process of farming and refining sugar on their Brazilian plantations. Portugal forbade domestic refining in order to stimulate the colonial industry and therefore sometimes white sugar from Brazil was shipped back to Europe. Sometimes, brown sugar was shipped on further to Northern Europe where it was refined in Amsterdam or Antwerp.[99] Indeed, refining had already become an emerging sector in leading Flemish and Italian centres such as Antwerp, Bologna and Venice by the last quarter of the fifteenth century. There were 28 refineries in Antwerp in 1575 and it had become one of the most important sugar refining centres in Europe. But after the Spanish occupation of Antwerp, Amsterdam became the new economic centre of the Dutch provinces. By the 1630s, Amsterdam superseded the other cities as the refining centre of Europe with 31

[97] Ralph Davis, 'Rise of Protection in England', p. 312.
[98] Zahedieh, *The Capital and the Colonies*, p.225 n.167
[99] K. G. Davis, *North Atlantic World in the Seventeenth Century* (Oxford, Oxford University Press, 1974) p. 185.

refineries and others in smaller towns nearby. 50 to 60 refineries were active in Amsterdam in 1660, and by 1662, the Republic provided more than half of the refined sugar consumed in Europe.[100]

As we saw earlier, sugar refineries already existed in England as early as the sixteenth century. In much the same way that the Portuguese and the Dutch sugar traders worked together, however, England's refining industry was neither isolated nor insular. Trade in sugar shows how England was fully enmeshed in European circuits of trade and industry, though even in this early period, before 1660, English refiners had a complicated relationship with foreigners. Sugar was an important trade for Barbary merchants who were averse to foreign competition.[101] Towards the end of the sixteenth and the first decades of the seventeenth century, a smattering of legal cases highlighted the tussles between domestic sugar traders and foreign merchants or refiners. Nevertheless, as in the Caribbean, the English home-grown industry was clearly influenced by the influx of foreigners bringing with them specialist knowledge and creating a competitive environment. The Calendar of State Papers records a complaint made to the crown in July 1593 by Sir Robert Zinzan about the increased number of refineries, which had lately risen from two to seven, and asked for them to be regulated as the sugar is 'brought in more by strangers than by Englishmen', thus hindering English navigational dominance. The foreign method of refining sugar, Zinzan also argued, used 'a great quantity of eggs' which caused the price of this staple to rise. These refiners were furthermore adulterating their sugar by using lime and 'other unwholesome dyers' compounds' to change the appearance of low quality sugar and make it appear to be expensive loaf sugar.[102] This complaint, however, might have been less disinterested than it first appears. Zinzan wanted to be appointed surveyor of the refiners of sugar.

Twenty years later, there was another case in which foreigners were vilified. The records for 1615/6 document a heated and protracted debate between the sugar merchants and refiners of London and the Grocer's Company. The former were trying to veto the erection of a sugar refinery by Paul Timmermans, a Dutchman with denizen status. The merchants argued that

[100] Jonathan Israel, *Dutch Primacy,* p. 265; Jan de Vries and Ad van der Woude, *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (New York, Cambridge University Press, 1997) p. 326.
[101] 'Queen Elizabeth – Volume 245: July 1593', in *Calendar of State Papers Domestic: Elizabeth, 1591-94*, ed. Mary Anne Everett Green (London, 1867) pp. 359-364.
[102] 'Queen Elizabeth – Volume 245: July 1593' in *Calendar of State Papers Domestic: Elizabeth, 1591-94*, ed. Mary Anne Everett Green (London, 1867) pp. 359-364.

Timmermans refinery would do damage to the national trade (in their words 'it would sucke out the hart and sweete of this business from the English').[103] The Grocers voiced their approval of Timmermans' enterprise and asserted that English merchants and refiners were driving up the price of sugar while refining it poorly. Eventually however, the English crown came to regulate the foreign trade in sugar more strictly in favour of the English merchants. One example comes from 1649, when a petition was put to the House of Commons from the 'Merchants and Refiners trading in Sugars'. In a precursor to the first Navigation Act, they asked that foreign sugars be charged with a higher tax rate than sugar from English plantations. This legislation was approved and signalled a shift towards the mercantilist system which would dominate English overseas trade for the next century or so.

The legal records bring to the fore a persistent tension which characterised the trade in sugar. It was constantly navigating the difficult path between the utility and the threat of the foreigner. On the one hand, foreign knowledge was seen to be useful and important, and some enjoyed the competitive environment that immigrants created. In the Caribbean, the Dutch planters taught the English how to grow and harvest the cane. The influx of foreign refiners, like Paul Timmermans, encouraged better refining practices and created an important competitive environment. Sugar refining was an emerging domestic industry but it was made faster by the international transmission of technology. On the other hand, foreign competition was seen to be an economic and political threat and foreigners were thought to hinder domestic trade. The merchants and refiners did not like the competition, and by the 1640s, neither did the crown. This antagonism, this push and pull, which we see in the early period, continued throughout the century, when it is perhaps even more starkly defined. I now turn back to the trade statistics to explore what they can tell us about foreign trade in sugar in the 1660s and the 1690s.

[103] 'James 1 - Volume 87: June 1616' in *Calendar of State Papers Domestic: James I, 1611-18*, ed. Mary Anne Everett Green (London, 1858) pp. 370-378.

IV.ii Official Statistics and International Trade

Figures 15 to *25* (which are laid out over the following pages) show the international trade in sugar, as reported in the Book of Tables and the Inspector General's Ledgers. I take imports, exports and re-exports in turn.[104] I then break down each of these further by date, variety of sugar and finally original location (for imports) or destination (for exports). As before, white sugar is shown in silver, brown in gold and molasses in navy. The darker shade in the charts signifies the value in thousand pounds, the lighter the volume in thousand cwt. Because the figures for each type of sugar vary so greatly the values of the y axes are different; however, the graphs useful for identifying the vast geographical range covered by English sugar. The process of disaggregating the figures down to this level of detail reveals more precisely the ways in which sugar flowed through the international economy.[105]

[104] As discussed above, there are no re-exports during the 1660s and no exports of brown sugar in either time period. The exports of molasses in the 1699-1701 period are so small, they do not warrant a graph. Only 0.06 000CWT was exported to three countries, Ireland, Scotland and the Hudson Bay Colony.

[105] While Ralph Davis also disaggregated the figures by geography to a certain extent, I break down the figures even further, into individual countries, and again by variety of sugar. Schumpeter also broke down the trade post 1700 by location but not by country or variety. (See below *Table 8*). As such, with these graphs, we get a much clearer role of sugar's role in the European and international economy over the second half of the seventeenth century. See Appendix A for Davis' geographic breakdown.

IV.iii Imports

Imports: London 1663/6

Fig. 15 White Sugar

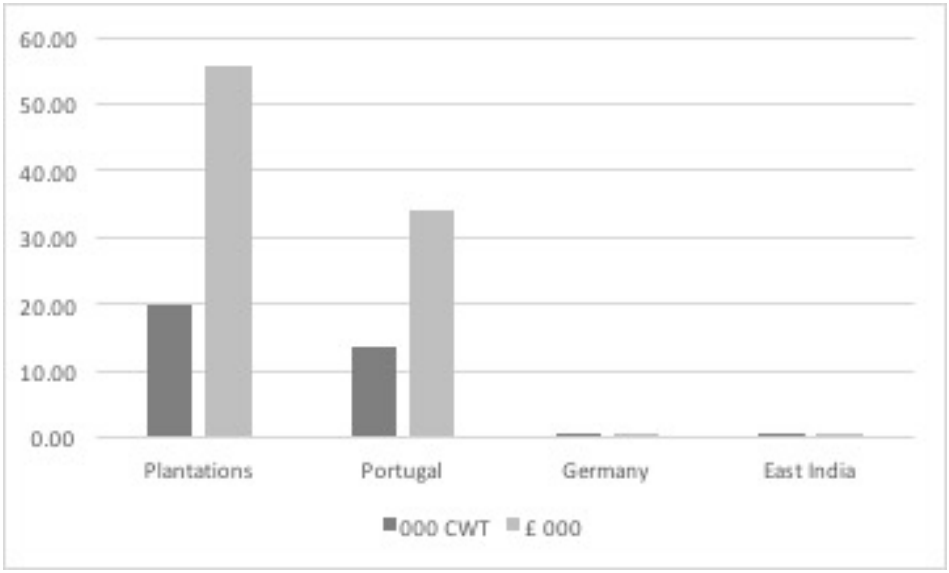
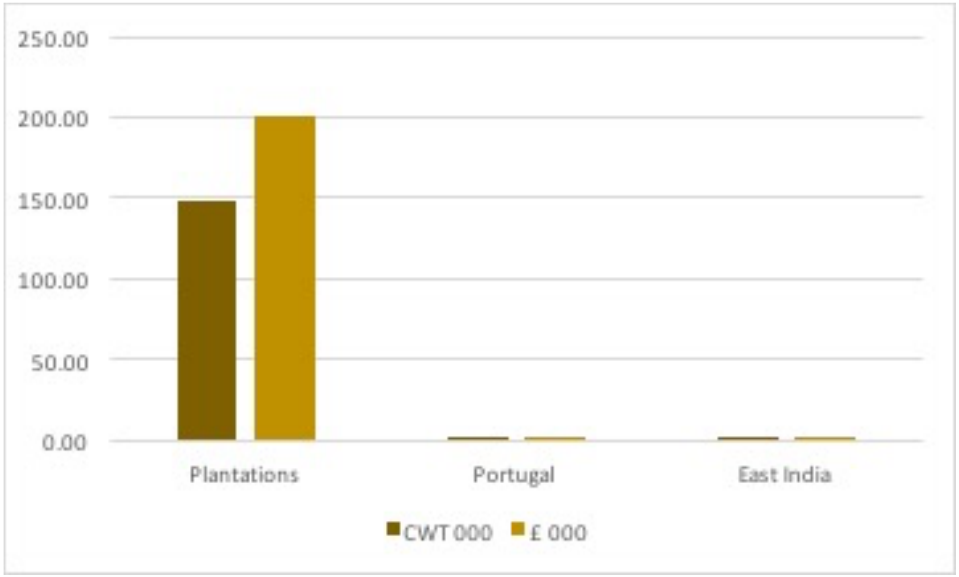


Fig. 16 Brown Sugar



Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

Imports: England 1699-1701

Fig. 17 White Sugar

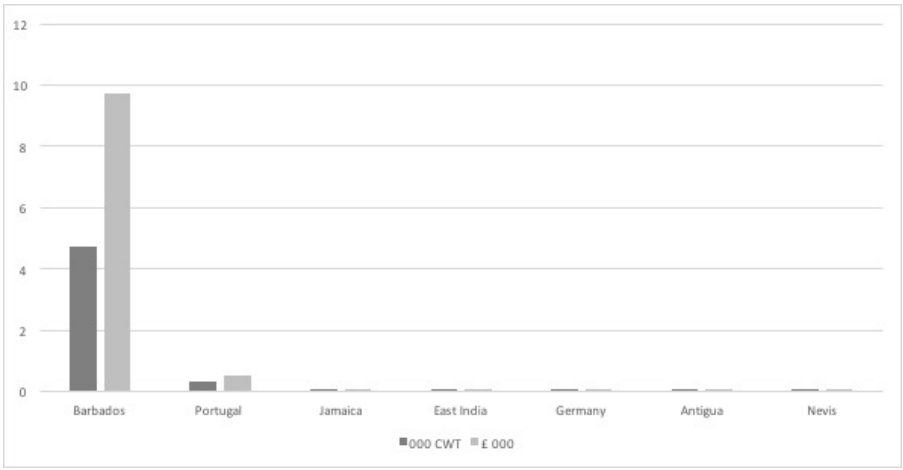


Fig. 18 Brown Sugar

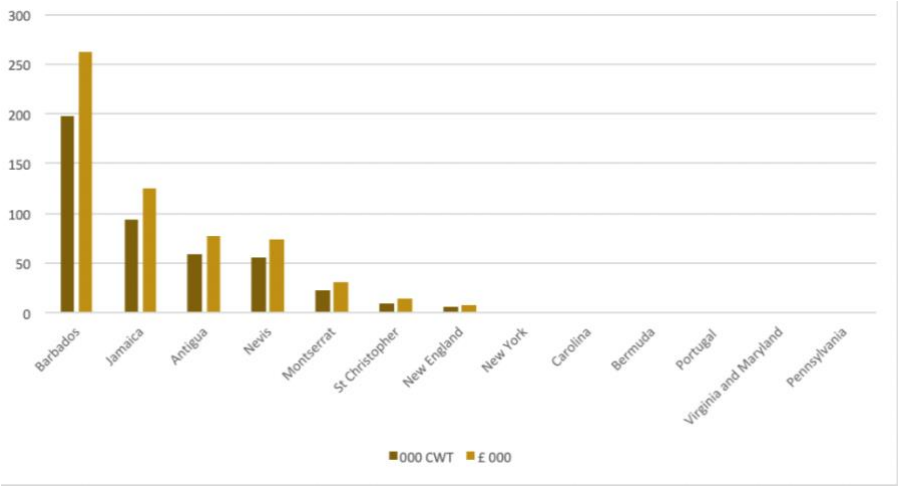
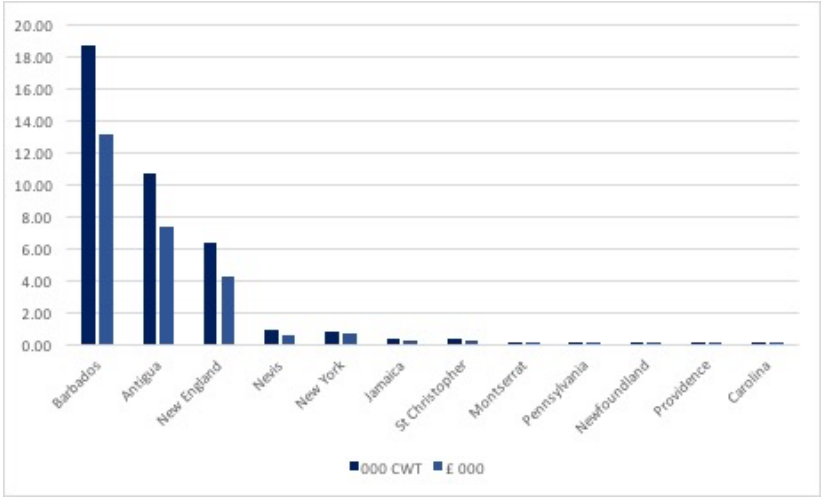


Fig. 19 Molasses



Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

The most dramatic shift in the import data, is not one that is particularly surprising. We see the rising importance of the Caribbean plantations as sources of the country's sugar, corresponding with the declining importance of European sources. The imports are where my figures most closely align with Ralph Davis' calculations. However, while Davis says all other sources of the country's sugar had dried up by the late 1600s, we see that this is not the case. Small amounts still arrived in the country via southern Europe and the East Indies. As this thesis is also concerned with North American trade in sugar, it is important to recognise the part played by imports of sugar from North American colonies. Davis does not distinguish between sugar coming from the Caribbean and sugar coming from the thirteen colonies; however, New England was the third largest supplier of molasses to England by the end of the century, and although the volume is relatively negligible in comparison to that coming straight from the islands, 2.2% of English sugar imports came from North America. This chapter does not focus specifically on North American trade in sugar because the equivalent trade statistics do not exist for the colonies. Nevertheless, these English figures serve as the basis for two important hypotheses about the American trade. Either (i) sugar was also being processed in North America, or (ii) American ports were already serving as clearing houses for goods from European colonies. Both of these hypotheses are credible and it important to take note of both. The first known refinery in North America was found on Liberty Street in New York in 1689.[106] It's conceivable that the molasses shipped to England was being processed on the colonial mainland and then shipped to England, and if this is the case, then the same arguments about the backward and forward linkages in England must be considered for Colonial America as well. Alternatively, by this time there were multiple rum distilleries along the North-East Corridor, which would have used large amounts of molasses.[107] Molasses was shipped to North America in prodigious quantities to fuel this industry, therefore it is conceivable that some was then re-exported East to England.[108] North America is seen as a source of tobacco, rice and silk and indigo, or as the larder furnishing the Caribbean with goods. It's important to locate sugar in this trading nexus as well. The numbers are not particularly large but they demonstrate a new way in which North American merchants, refiners, and consumers were linked to European counterparts. In the following chapters, I discuss this relationship in more detail.

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[106] Paul L. Vogt, *The Sugar Refining Industry in the United States* (Philadelphia PA., University of Pennsylvania Press, 1908) p. 6.
[107] McCusker, *Rum and the American Revolution*, p. 434.
[108] John J. McCusker, *Rum and the American Revolution* and David Eltis, 'New Estimates of Exports from Barbados and Jamaica, 1665-1701', *William and Mary Quarterly,* 52:4 (1995) *passim.*

Exports: London 1663/6

Fig. 20 White Sugar

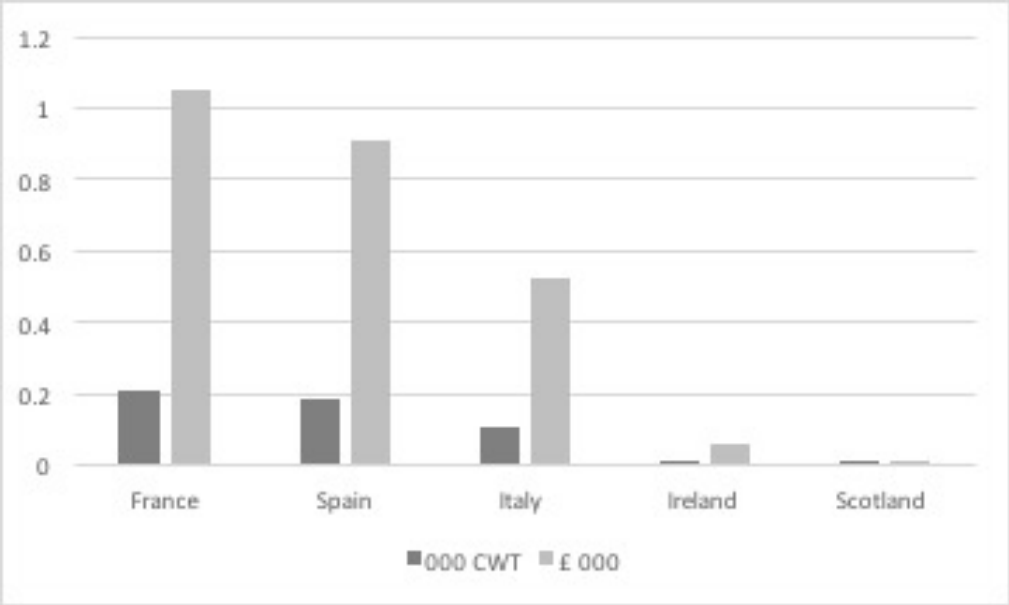
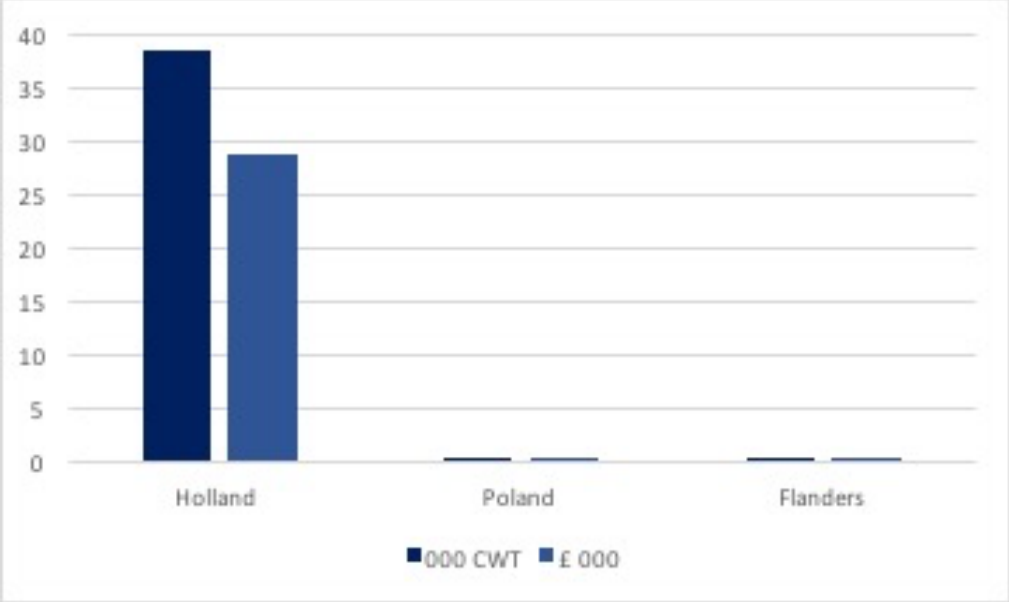


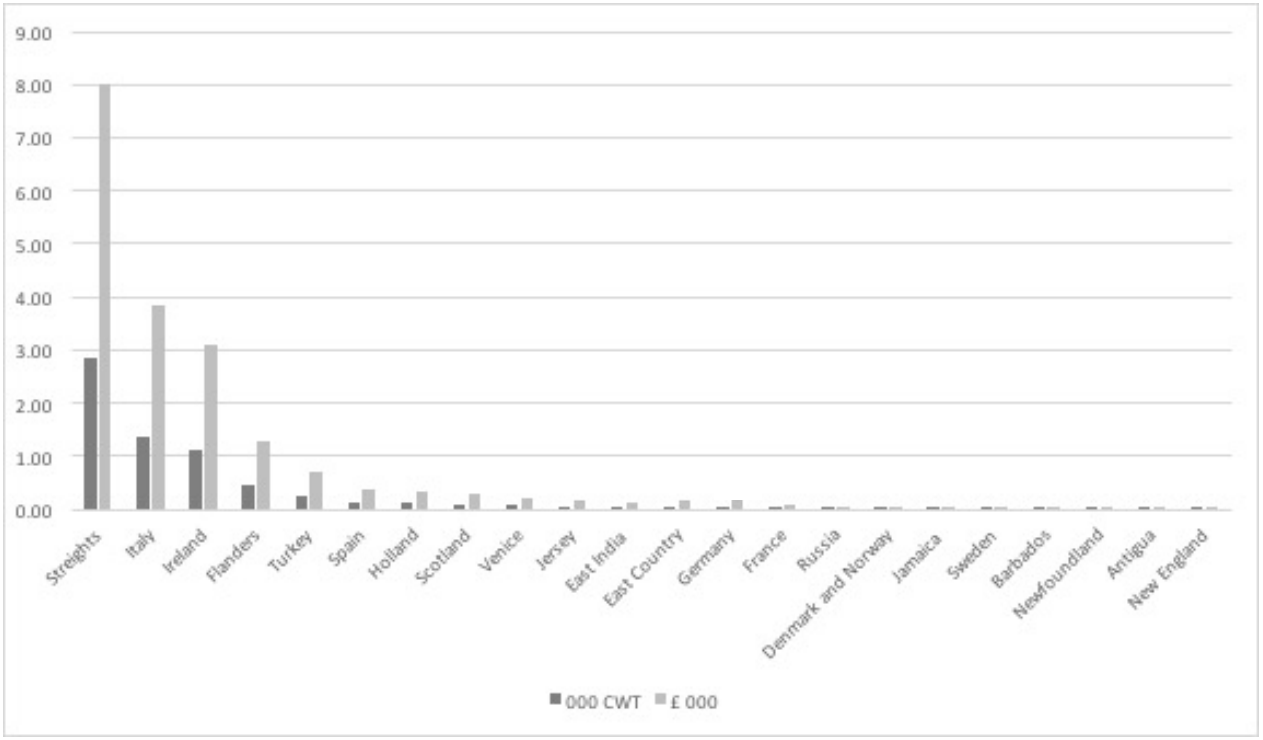
Fig. 21 Molasses



Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

Exports: England 1699-1701

Fig. 22 White Sugar



Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

IV.iv Exports

The early evolution of the international sugar trade becomes even clearer when we look at exports. One of most important conclusions to draw from the graphs is that England was exporting sugar products in the 1660s. Consensus thus far has been that export of sugar did not begin until far later in the seventeenth century, but we see from the graphs here and in *Section III* that the English were exporting both white sugar and molasses in the 1660s to a variety of locations.[109] We can also see how the industry developed over time by comparing the early figures with those from the end of the century. The value of the sugar exports from London stayed almost constant between these two snapshots over a 38-year period. However, the volume drops considerably. As I discussed in *Section III*, the nature of exports was changing. While in the 1660s, molasses, which was much cheaper per pound, dominated the exports, by the 1690s the chief export was more expensive refined sugar.

This shift is key to our understanding of England's role in the international economy. In the 1660s, England was exporting only small amounts of sugar and sugar products to a few countries (see *Figs. 20 & 21*). Amsterdam at this point was still the central source of refined sugar for the European market. It had a larger number of refineries and the source of sugar from Dutch Brazil had not yet diminished. Nevertheless, the fact that the English were sending molasses to Holland is important. It demonstrates, firstly that the English were refining enough sugar to sell a by-product on a foreign market and secondly, that there would already have been established trading routes for sugar to cross into these markets. The English were aware of continental demand for the good even in the 1660s. Since the Portuguese encouraged the refining industry in Brazil, sugar at a later stage of refining reached Holland, meaning that less molasses was produced as a by-product from the domestic industry in the Netherlands. Nevertheless, the Dutch were prodigious consumers of molasses or treacle, and many of their national dishes depended on the ingredient, including the famous Stroop waffles.[110] England could furnish this demand. Even at this early point, English refiners and merchants were keen to exploit the sweet tooth of others.[111]

[109] Neither Davis, nor Sheridan, nor Shammas nor Zahedieh have written about the export figures found in BL Add MS 36785.
[110] Strum, *The Sugar Trade*, pp. 181-237.
[111] We can see elements of this practice as early as the 1590s. In 1593, Richard Carmarden, the Surveyor of Customs issued a strong rebuff to Robert Zinzan's arguments. Carmardan explained that the refining industry brought in more customs income for the crown as the English were able to undercut the prices of sugar refined elsewhere in Europe. This then allowed them to export sugar to receptive foreign markets. However, sugar at

By the end of the century, England's role as sugar exporter had developed. English sugar traders no longer produced molasses for the European market but, with the development of the domestic refining industry, were able to turn their hand to shipping out more expensive refined sugar. Admittedly the volume of this trade was not large, but the range of countries is much more telling. *Figure 22*, in fact, undersells the geographical extent of the trade. It only includes countries which received more than 0.01 thousand CWT but in total thirty countries imported white sugar from England in the later period. Davis does not disaggregate the location of countries importing English sugar at all, but this information is foundational to comprehending the development of the industry and England's role as sugar-supplier to the rest of Europe. Most importantly, English refined sugar was travelling down to southern Europe, which previously had been supplied by Portugal. The English were wrestling control of the industry out of the hands of international competitors. Furthermore, sugar helped to reinforce trading networks across the whole of the continent and even beyond, travelling as far as India and China. The export figures therefore demonstrate the extensive nature of the trade in sugar in the seventeenth century.[112] While the interconnected trade of goods and people between North America, the Caribbean and Africa has been considerably documented during this period, these revised figures support recent work which has tried to place 'the Atlantic world, in the world'.[113] Sugar was travelling back and forth across the Atlantic and also to India and around Europe. It was a global good and one which influenced the development of worldwide trading networks, as well as the spread of industrial activity.

this point still came from foreign sources, and not English plantations. See: 'Queen Elizabeth – Volume 245: July 1593', in *Calendar of State Papers Domestic: Elizabeth, 1591-94* ed. Mary Anne Everett Green (London, 1867) pp. 359-364.

[112] One of the reasons that this point about the early sugar export business might have been overlooked by previous scholars is that over time, England increased the percentage of sugar it kept for domestic consumption. By the mid-18th century it is 80% (Ormrod, *Rise of Commercial Empires*, p.180) at this point it is 50%. The percentage change does not accurately represent the volumes being exported, however, given that imports continued to rise significantly.

[113] Kathleen D Morrison and Mark W. Hauser, 'Risky Business: Rice and Inter-Colonial Dependencies in the Indian and Atlantic Oceans' in *Atlantic Studies*, 12:3 (2015) p. 372. See also: Jack P. Greene, 'Hemispheric History and Atlantic History' in Jack P. Greene and Philip D. Morgan (eds.), *Atlantic History: A Critical Appraisal* (New York, Oxford University Press, 2009) pp. 299–316.

Re-exports: England 1699-1701

Fig. 23 White Sugar

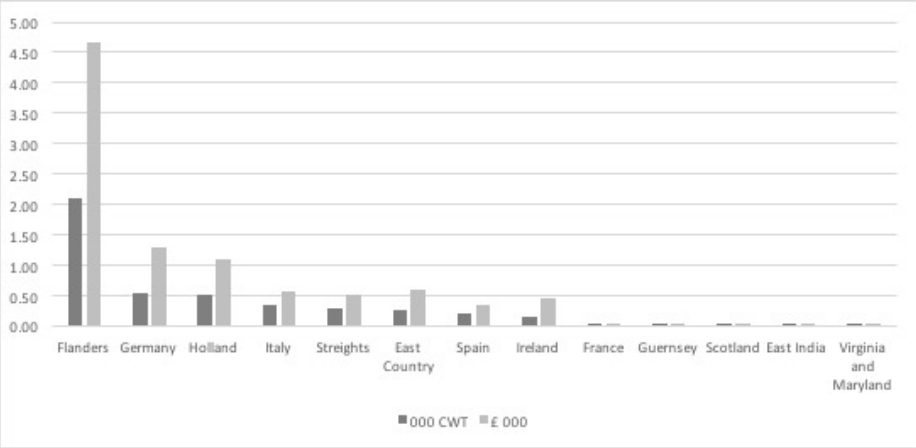


Fig. 24 Brown Sugar

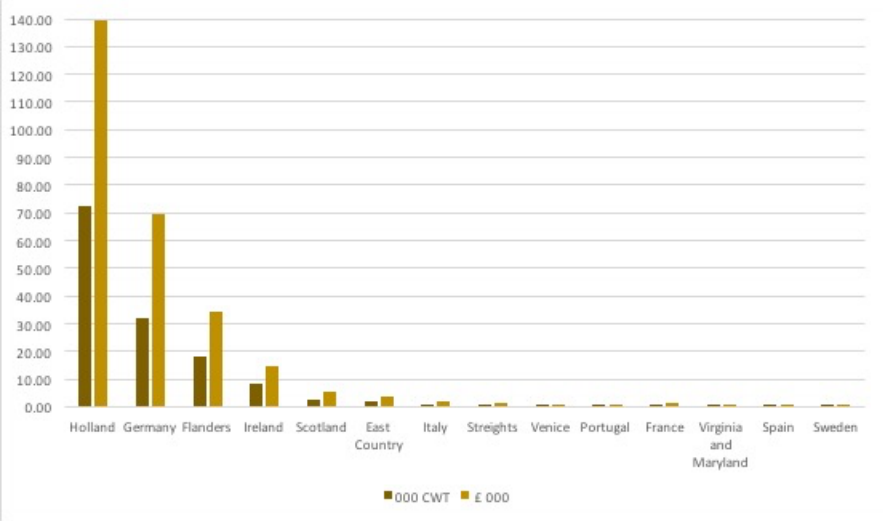
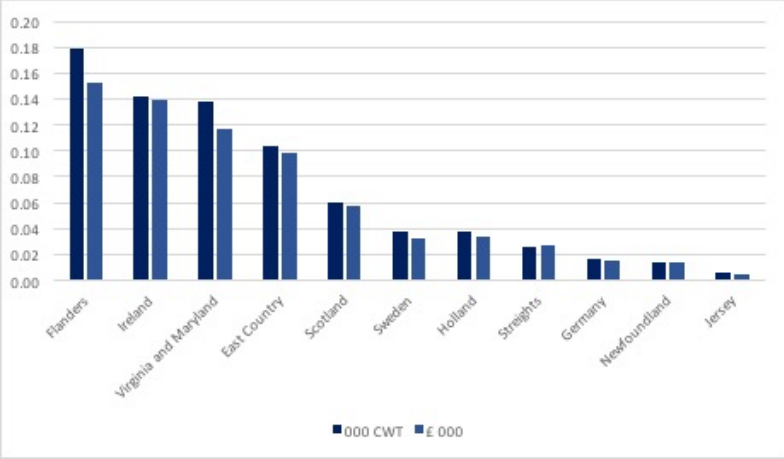


Fig. 25 Molasses



Source: calculations from BL Add MS 36785 and PRO CUST 3 3-5

IV.v Re-exports

England did not re-export sugar in the 1660s but by the end of the century, it had become an entrepôt through which sugar passed before reaching the hungry mouths of European consumers. Small amounts of molasses and white sugar followed this route, but the major export was brown sugar. The figures for re-exports are a further site of difference between my figures and Davis'. While the total figures are the same, Davis consolidates his numbers into fewer geographical areas. Just as with the export trade, I find that there was a wide geographical spread in the re-export trade. This is particularly noticeable in the trade with Europe. All three charts show that England was re-exporting white and brown sugar and molasses to a number of different European countries.[114]

The seventeenth century was one characterised by shifting power dynamics between European countries, especially between England and the Netherlands. David Ormrod makes the crucial point that this was not a 'relay race', England did not take the baton of power from the Dutch, rather the two empires co-existed with one another for many years. [115] A more suitable metaphor might perhaps be that of a see-saw, as English power increased, Dutch power fell and vice versa. Nevertheless, the rise in brown sugar re-exports to Holland demonstrates one particular fluctuation in this relationship. As English interests in the West Indies rose, those of the Dutch declined. Unable to pay its debts, the first Dutch West Indian company dissolved in 1674 and its second realization focussed on the trafficking of enslaved people from Africa rather than shipping goods from plantations. Dutch trading activity, moreover, became orientated toward the East, and antagonism between the Dutch and the English was absorbed by the textile trade and East Indian competition.[116] It was comparatively easy therefore, for the English to increase its control of the sugar trade in Europe at the expense of the Dutch and start to supply them with sugar and sugar products.

[114] The trade between England, Scotland and Ireland is also worthy of comment given the creation of refineries in both Scotland and Ireland, which speaks to a developing market for the good throughout the British Isles. The relatively late (1667) creation of refineries in Glasgow was due to legislation which dictated the good must pass through England before travelling North. See John Hill Burton, *Register of the Scottish Privy Council*, 2nd series (Edinburgh, H.M. General Register House, 1898-) Vol. XII, pp. 91-2.
[115] David Ormrod, *Rise of Commercial Empires*, p. 334.
[116] F. J. Fisher, 'London's Export Trade in the Early Seventeenth Century', *Economic History Review,* 3 (1950) pp. 151-161 and de Vries and Van de Woude, *First Modern Economy*, p. 464.

The tariff policy of the English government encouraged this expansion. As I describe above, Brown sugar arriving from the colonies would pay an import duty, but if it was shipped out again, the merchants would be able to claim some of this back.[117] This policy was so effective that refiners of sugar in 1697 petitioned for the same protection on domestically refined sugars. They wanted to be able to ship refined sugar out cheaply to foreign markets. They argued that the rebate policy meant that foreign refiners were able to refine the re-exported English brown sugars too cheaply which decreased the European market for English refined sugar.[118]

IV.vi Sugar and Europe by 1700

Considering imports, exports and re-exports together reveals the extensive, complex, and developed trading infrastructure surrounding sugar. It was a globally orientated industry. The figures add to our understanding of the nature of Atlantic trading networks in the seventeenth century. England became a major supplier of sugar to European markets. My revised data, especially that which shows England's export of sugar, demonstrates that the process of dominating the European markets was not a sudden one but happened gradually, already beginning in the early 1660s.[119] As I say above, the figures are quite small: sugar makes up 5% of imports, exports and re-exports of goods recorded in the customs ledgers from 1699-1701. However, trade of the good has the greatest value of any colonial product, and the backward and forward linkages the good encouraged are noteworthy.[120] Sugar, and its international spread, therefore support the conclusions of David Hancock that by the end of the century the Atlantic had become 'the pivot of empire; and the English economy had 'come to depend on the Atlantic marketplace to a remarkable extent' - as they do the point made by Nuala Zahedieh that by 1700 that London had emerged as a major European entrepôt.[121]

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[117] Ralph Davis, 'Rise of Protection in England, 1689-1786', p. 312.
[118] 'William III, 1697-8: An Act for granting to His Majesty a further Subsidy of Tunnage and Poundage towards raiseing the Yearly Summ of Seven hundred thousand Pounds for the Service of His Majesties. Household & other Uses therein mencioned dureing His Majesties Life. [Chapter XXIII. Rot. Parl. 9 Gul. III. p. 4. n. 5.]', in *Statutes of the Realm: Volume 7, 1695-1701*, ed. John Raithby (s.l, 1820) pp. 382-385. *British History Online* http://www.british-history.ac.uk/statutes-realm/vol7/pp382-385 [accessed 1 October 2020].
[119] In her analysis of the London port books from 1686, Zahedieh found that about one third of the sugar imported into London was re-exported out to Europe. See Zahedieh, 'London and the Colonial Consumer', p. 247.
[120] Davis, *English Foreign Trade*, p- 164-165 and PRO CUST 3 3-5.
[121] David Hancock, 'Atlantic Trade and Commodities 1402–1815' in Nicholas Canny and Philip Morgan (eds.), *The Oxford Handbook of the Atlantic World: 1450-1850* (Oxford, Oxford University Press, 2011) p. 329. Zahedieh, *Capital and the Colonies,* p. 234.

Image XI Jacob Knijff, *English and Dutch ships taking on stores at a port*, 1673 (National Maritime Museum, London).

The mercantilist policies of the English state during this period have been characterised as ones which sealed England off from international competition, and where the country relied on the 'ghost acres' of the colonies, whether it be the sugar plantations in the Caribbean islands, or staples-producing land in Colonial North America. The creation of home demand for sugar is thought to be one of the crowning achievements of these policies.

However, let's turn again to another port scene. *Image XI* was painted by Jacob Knijff (1631-1689), a Dutch Golden Age painter who originated from Haarlem. Entitled *English and Dutch ships taking on stores at a port*, it is remarkably similar to the one by Samuel Scott with which I started the chapter, although it dates from around 80 years earlier. The port is still busy, filled with a number of different people and animals. Another Dutch migrant, Knijff lived in London in the second half of the seventeenth century and became famous for painting shipping scenes. Knijff's painting shows both English *and* Dutch ships unloading and restocking their ships with goods destined for consumers in distant locations. As David Ormrod has argued, the rising dominance of England must be situated in a regional context. England, by the end of the century, was firmly positioned in a coherent 'North Sea' zone which made up the core of the European world economy.[122] While the Navigation Acts were intended to exclude Dutch competitors from the colonial carrying trade, and the two countries had uneven political relationships, during points of peace, goods, people and, knowledge flowed between the two countries, as demonstrated by the image here and the information found in the trade statistics. The circular route between England, North America, Africa and

[122] Ormrod, *The Rise of Commercial Empires*, p. 336.

the Caribbean has been clearly marked out but England did not develop without the support of strong neighbouring European markets. Furthermore, English sugar did not trickle into the Netherlands alone. The good found a vast and expansive export and re-export market across the world. The sugar trade is a further example of the economic interdependence of individual countries, even during the period when they began to forge their identities as nation states.[123]

IV.vii 1700-1720: Importance of the Domestic Market

Such economic interdependence, however, did not last forever. While the primary of aim of this chapter has been to consider the trade in sugar during the latter half of the seventeenth century, its argument is both nuanced and supported when looking further forward into the first two decades of the eighteenth century. Here, I have turned to the work of Elizabeth Schumpeter, who collated English overseas trade statistics for the years 1697 – 1808 using the same Inspector General Customs Ledgers.[124] I reproduce several sets of her figures and add graphical representations of them to explore how imports, exports and re-exports of sugar developed in these transition years.[125] The numbers show that the English sugar trade pivoted and turned inwards during the following century. While the figures for the seventeenth century show England to be interlinked with the rest of Europe, and trading sugar as a re-export to supply other countries while home consumption caught up, by the eighteenth century more and more sugar stayed in the British Isles for domestic consumption.

[123] S. R. Epstein, *Freedom and Growth: The Rise of States and Markets in Europe, 1300-1750* (London, Routledge, 2000) p. 27.
[124] E. B. Schumpeter (ed.), *English Overseas Trade Statistics, 1697-1818* (Oxford, Oxford University Press, 1960)
[125] The ledgers for 1705 and 1712 are missing and therefore we have no figures for these years.

Table 5 Imports of Brown Sugar 1700-1720 (£000)

Date	Imports
1700	667.67
1701	598.55
1702	357.85
1703	564.53
1704	436.46
1705	
1706	458.53
1707	533.34
1708	520.99
1709	546.10
1710	697.31
1711	505.27
1712	
1713	699.85
1714	707.90
1715	853.70
1716	939.20
1717	1056.81
1718	784.43
1719	756.42
1720	980.19

Source: Schumpeter, *English Overseas Trade Statistics,* pp. 48-49.

Fig. 26 Imports of Brown Sugar (£000)

Source: Schumpeter, *English Overseas Trade Statistics,* pp. 48-49.

Imports

Schumpeter's figures show that the value of imports of unrefined brown sugar continued to rise into the eighteenth century and although interrupted occasionally by years of retrenchment, the general trend is upwards. As British plantation agriculture continue to expand over the course of the eighteenth century, production of sugar increased with it. It was this huge expansion in supply which allowed *per capita* consumption to accelerate at pace during the following century. Growing volumes of brown sugar meant that the domestic refining industry also continued to grow, Eric Williams details the expansion of the domestic refining industry across the country in the 1700s. By 1750, he estimates there to be 120 refineries across the British Isles.[126]

[126] Williams, *Capitalism and Slavery,* p. 73.

Exports and Re-Exports

As the refining industry expanded, the volume and value of refined sugar exports, and brown sugar re-exports did not grow as swiftly. *Table 6* shows figures for volumes and values of refined sugar exports from 1697-1720. *Table 7* shows the volumes of 'sugar' imported, re-exported and that retained for home consumption. I have also calculated the percentage of imports which were re-exported and the percentage of those which were retained. *Table 8* shows the volume and destination of sugar exports at five year intervals from 1701-1720.

Table 6 Value and Volume of Refined Sugar Exports 1697-1720

Date	Exports (£000)	Exports (000 cwt)
1697	1.11	0.4
1698	1.42	0.5
1699	39.64	14.4
1700	48.69	17.7
1701	9.70	3.5
1702	8.30	3
1703	1.91	0.7
1704	3.67	1.3
1705		
1706	5.42	2
1707	6.28	2.3
1708	6.50	2.4
1709	2.63	1
1710	5.97	2.2
1711	3.82	1.4
1712		
1713	9.61	3.5
1714	9.58	3.5
1715	12.33	4.5
1716	13.79	5
1717	27.48	10
1718	36.26	13.2
1719	10.03	3.6
1720	8.54	3.1

Source: Schumpeter, *English Overseas Trade Statistics,* pp. 19, 20 & p. 23.

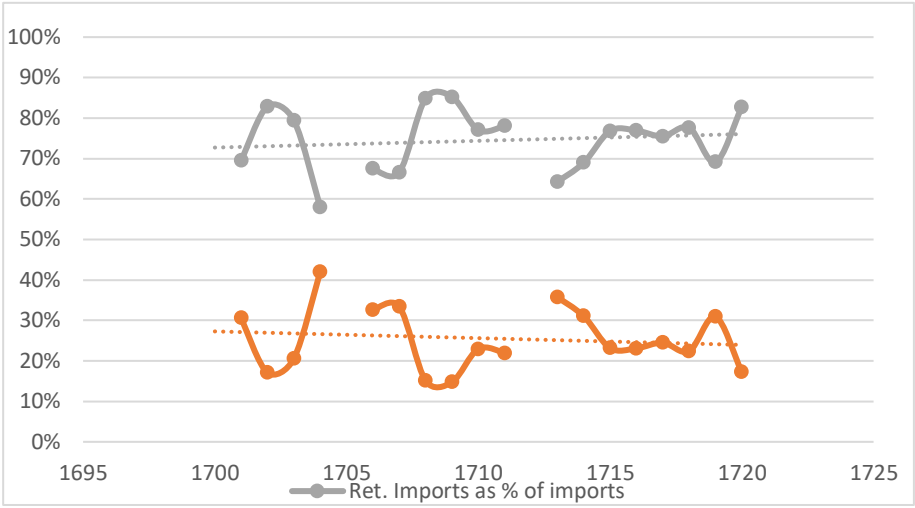
Firstly, it is important to note that the years 1699 and 1700 are massive outliers when considering exported refined sugar. As mentioned above (p.71), the 9 Years War had meant that refined sugar had been stored rather than shipped. Exports of refined English sugar do not rise to the same levels until the mid-eighteenth century and later. From *Table 7* and *Fig. 27*, we also see that the percentage of brown sugar re-exported trended downwards, while that retained for home consumption trended upwards. In the first two decades of the eighteenth century, home consumption and the home market became more important for the trade.

Table 7 Volumes of Sugar Imported, Exported and Retained & Percentages 1700-1720 (000 CWT)

Date	Imports		Re-Exports	% of imports		Retained Imports	% of imports
1700	485						
1701	432		132	31%		300	69%
1702	258		44	17%		214	83%
1703	408		84	21%		324	79%
1704	314		132	42%		182	58%
1705							
1706	332		108	33%		224	67%
1707	386		129	33%		257	67%
1708	378		57	15%		321	85%
1709	495		73	15%		422	85%
1710	505		116	23%		389	77%
1711	365		80	22%		285	78%
1712							
1713	504		180	36%		324	64%
1714	512		159	31%		353	69%
1715	617		143	23%		474	77%
1716	684		158	23%		526	77%
1717	763		187	25%		576	75%
1718	567		127	22%		440	78%
1719	544		168	31%		376	69%
1720	705		122	17%		583	83%

Source: Schumpeter, *English Overseas Trade Statistics,* p. 61.

Fig. 27 Retained Imports and Re-Exports as Percentage of Imports 1697-1720



Source: calculations from Schumpeter, *English Overseas Trade Statistics,* p. 61

Like Davis, Schumpeter also recorded the destination of sugar exports. By breaking down these destinations into individual countries, and looking at volumes and values I can use Schumpeter and Davis's figures to show just how much sugar was exported to individual countries in Northern and Southern Europe. Schumpeter's numbers for the following two decades show a decline in supply to Northern Europe. Nevertheless, despite the fall absolute terms, the percentage of total exports to Southern Europe remained high. England was still supplying the Iberian Peninsula, once leaders in the trade.

Table 8 Volume and Destination of Sugar Exports 1701-1720 (000 CWT)

	Africa and East Indies	Northern Europe	Central Europe	Southern Europe	British Europe	United States	Brit. Cont. Conlonies	British West Indies	Total
1701	0.114	0.011	0.339	15.768	1.427	0.004	0.012	0.03	17.705
1706	0.01	0.144	0.044	1.295	0.453	0.01		0.013	1.969
1710		0.071	0.032	1.583	0.439	0.007	0.003	0.035	2.17
1710	0.004	0.21	2.194	0.908	0.668	0.058		0.442	4.484
1720		0.084	0.07	1.465	0.635	0.32		0.53	3.104

Schumpeter, English Overseas Trade Statistics, p. 65

Section V Conclusions: Sugar, England and the World

Looking in detail at the two sets of trade statistics opens up our understanding of the changing nature of the sugar trade during this period and the implications the trade had both for England's domestic economy and for its role in the international economy. While the value and the volume of trade were not enormous during this period, the nascent industry forged vital trading patterns and configurations. The blossoming of the domestic refining industry, as evidenced by the rise in brown sugar arriving from the colonies, was an early site of domestic industrialization and encouraged a number of subsidiary sectors. Eric Williams also noted the importance of the industry in *Capitalism and Slavery* and this research grows out of his initial observations.[127] However, the combination of trade figures, archaeological evidence, and local history employed in this chapter show sugar refining to be more geographically extensive and more developed earlier than the time-period covered by Williams' analysis.

The value-added nature of sugar refining is one example of how the economy of England was shaped around extraction and exploitation in the colonies, and of the reliance upon such extraction for the generation of capital in the metropole. Processing sugar added value to the original good, and enabled sugar merchants to reap the profits. Furthermore, the development of sugar refineries is one of the first examples of England's growing reliance on coal and its accelerating transition to an economy based around heat-intensive industry. This transition had not gone unnoticed by English citizens. The pollution worried them then, as it does now. Sugar refining contributed to the smoke, sweat and heat which fuelled the complaints found in *Orvietan,* a long discourse on the dangers of the polluted air in London in the 1690s.[128] By the end of the century, the city was sooty, blackened with the effluent of industry. The exploitation of the stock of capital found in coal was one of the two 'capitalisms' (to use E. A. Wrigley's term) necessary for the industrial revolution of the following two centuries.

During this chapter, I have pointed to the ways in which sugar percolated into the wider economy. More sugar arrived at port, allowing more to be purchased by consumers with a sweet-tooth. The dirty smoke of sugar refining and the consumption of the good which it produced, moreover, was not confined to London or the South-East. The investigations in this

[127] Williams, *Capitalism and Slavery*, pp. 56 - 60.
[128] *Orvietan, or a counter poison against the infectious air of London*, c.1690, BL Sloane MS 621.

chapter speaks also to the development of northern economies. The early refineries in the Lancashire area were key components of the initial industrialization of the North. Sugar caused rivers to be cleared, docks to be built, and coal seams to be mined right across England. Jan de Vries and Ad Van de Woude make the same observation when writing about the Amsterdam refineries which had sprung up 50 years earlier, defining them as 'among the few industrial facilities that can be compared with the factories of the nineteenth century'.[129] They note the economic significance of sugar refining, commenting that it was 'of major importance to the city's economy because of the large investments of capital, the value of output, the important links to foreign trade, and the number of persons employed'.[130] Similar trends were emerging in England.

The similarities between Amsterdam and England show that the growth in the domestic sugar refining industry also had implications for England's role in the Atlantic world economy. The trade statistics reveal the intertwined and interwoven nature of imperial economies during this period. Although sugar re-exports decreased in the eighteenth century, when cheap sugar from French colonies flooded the European market, in the seventeenth century, sugar was an important re-export and part of England's burgeoning role as the clearing house of Europe.[131] Merchants had also begun to export small amounts of the domestically refined sugar. The export of surplus colonially-produced but domestically manufactured sugar and sugar by-products to foreign markets has parallels with the cotton trade which exploded in the eighteenth and nineteenth centuries. For example, similar protective tariffs, such as the Calico Act of 1721, controlled Indian production and imports of Indian cloths to Britain and reserved the home market for British producers, enabling this rapid expansion. As Pat Hudson writes 'The rise of domestically produced printed cottons and mixed worsteds catering for trades formerly fed by Indian products cannot be over-estimated.'[132]

The links with Amsterdam, moreover, are a helpful reminder when discussing other ways in which the refining industry was influential. Intangible concepts like knowledge and competition, as well as physical goods, also flowed through the Atlantic world. Throughout this chapter, we have seen the impact that foreigners had even during a period of an

[129] De Vries and Van de Woude, *First Modern Economy,* p. 329.
[130] De Vries and Van de Woude, *First Modern Economy,* p. 326.
[131] Ralph Davis, 'English Foreign Trade 1700-1774', *Economic History Review,* 15:2 (1962). p. 294.
[132] Pat Hudson, 'Slavery, the slave trade and economic growth', p. 42.

increasingly protectionist national economy. Refining skills travelled around the Atlantic basin. England was in debt to systems, skills and trade routes engineered by the Portuguese and Dutch in the previous decades.[133] Maxine Berg and Pat Hudson insist that 'specialised regional industrial clusters, associated with ports serving Atlantic markets, particularly London, Bristol, Liverpool and Glasgow were key to the expansion of Britain's industrial skills base', which in turn facilitated the mass industrialisation of the nineteenth century.[134] Sugar refineries close to ports played a role in these early clusters.

Arguing for the importance of sugar refining and its impact on the English imperial economy and its place in the global one is not uncontroversial. Disputes about the validity of Williams' initial arguments have stimulated debate in economic history for decades, and his statements have energized, indeed, catalysed a variety of investigations into the impact of slavery on the economy. The scholarship broadly speaking can be divided into two camps. There are those who focus on the very narrow quantitative interpretation of the ways in which slavery affected the economy and those, including the author of this thesis who takes a broader approach. David Eltis and Stanley L. Engerman are the key proponents of the 'small percentages' theory. They argue that slavery's 'direct contribution to the economic growth of any nation was trivial'.[135] Robert Duplessis, continues in the same vein, writing that 'sugar – ordinarily the leading colonial commodity from the 1660s to the early 1800s and long the prime impetus to slaving – did not have a large impact on metropolitan economies. Its refining neither stimulated technological change nor elicited notable growth in other sectors'.[136]

However, by showing how early domestic British industry was supported by the sugar trade and enslavement in the colonies, this thesis adds weight to the arguments put forward by Catherine Hall, Nicholas Draper and Keith McClelland which point to the ways in which slavery was inextricably entangled with the British economy.[137] Without overstating or oversimplifying the importance of slavery and the sugar-complex, Hall, Draper and

[133] See Ebert, *Between Empires* and Strum, *The Sugar Trade*, *passim*.
[134] Maxine Berg and Pat Hudson, 'Slavery, Atlantic trade and skills', p. 266
[135] David Eltis and Stanley L. Engerman, 'The Importance of Slavery and the Slave Trade to Industrializing Britain', *Journal of Economic History*, 60:1 (2000) p. 129.
[136] Duplessis, *Transitions to Capitalism*, p. 224.
[137] See Hall, Draper and McClelland (eds.), *Emancipation and the remaking of the British Imperial World* and *Legacies of British Slave-Ownership: Colonial Slavery and the Formation of Victorian Britain* (Cambridge, Cambridge University Press, 2014).

McClelland take a more expansive and dynamic reading of the Williams thesis than that taken by Eltis and Engerman. They look beyond 'direct contributions' of the slave trade to the economy to ancillary trades and to economic spill-overs and linkages which were supported, encouraged or accelerated by the presence of slavery. This approach can also be seen in the work of Zahedieh, Berg and Hudson.[138]

Eltis and Engerman focus on the 'strong' version of the Williams argument adopting a falsification approach to test the thesis that slavery caused industrialisation. Their approach and methodology is that of the economist. It is not necessarily superior. A falsification approach is not deemed necessary outside an economist's economic history – the weight and analysis of source material is considered just as valuable especially if the focus is on the broader interpretation of the Williams thesis which accommodates a wide range of direct and indirect linkages between slavery, the Atlantic economy and British economic growth. Zahedieh has also compelling refuted the need for a falsification approach by arguing that her research is 'used to fortify the continued discussion of how Britain's large investment in colonial expansion did, in fact, shape the quality of its particular path to industrial revolution rather than to speculate on what might have happened without it'.[139] While this thesis interacts with the arguments of economic historians, its approach is closer to those who support the Williams thesis, and it draws its strengths from the mass of archival, qualitative and cultural evidence combined to give substance to and support for its arguments.

The analytical work of this chapter explores the idea that sugar refining and the sugar trade aided Britain's transition to a capitalist economy. It was layered, to use Giorgio Riello's metaphor, alongside a number of elements which also contributed to growth and development.[140] I show that important features of these industrial processes were already well established in the seventeenth century – for example, the use of coal to create manufactured sugar. De Vries and Van De Woude, in their study of the Dutch economy, contend that there is 'no justification for positing the existence of a deep chasm separating the traditional from the modern, the preindustrial from the industrial'.[141] There was not a fixed point at which modernity or industrialisation arrived, lock stock and barrel.

[138] Maxine Berg and Pat Hudson, 'Slavery, Atlantic trade and skills'
[139] Zahedieh, 'Eric Williams and William Forbes', p.786.
[140] Giorgio Riello, *Cotton: The Fabric Which Made the Modern World* (Cambridge, Cambridge University Press, 2013) p. 10.
[141] De Vries and Van de Woude, *First Modern Economy*, p. 693.

To review, the volume of the sugar trade was relatively small, but in it we see the beginnings of the formation of economic systems and of models which were further developed during the eighteenth and nineteenth centuries, and which contributed to the changing economic organisation of the British empire. Here I am adding to Barbara Solow's argument that it was not the volume of traded sugar that was important but its position as a role model for later trade.[142] The choice of the English state to shift sugar refining from the colonies into England contributed to the creation of industrial zones through the clustering of refineries with other heat-intensive industries, and supported the expansion of the coal trade as well as encouraging shipping and packaging on home territory. As such, sugar was an important precursor to the eighteenth-century expansion of the coal trade as detailed by Robert Allen.[143] In sugar refining moreover, we see that early industrialisation relied on imports from the colonies. The production of the raw good took place far away from where it was processed and so where crucially value was added, much like cotton in the following century.[144]

The intention of this thesis is to consider the rise of the consumption of sugar and the effects this had on the economy. In this chapter, I have sought to demonstrate the ways in which greater volumes of sugar coming into the country affected the domestic economy. In the following chapter, I turn to the second of E. A. Wrigley's 'two capitalisms' - consumer demand – to more explicitly understand how these greater volumes were eaten by ordinary consumers.

[142] Barbara Solow, 'Capitalism and Slavery in the Exceedingly Long Run', *The Journal of Interdisciplinary History,* 17:4 (1987) p. 713.
[143] Robert C. Allen, *The British Industrial Revolution in a Global Perspective*, pp. 90-91.
[144] Beckert, *Empire of Cotton*, p. 98.

Chapter Three – Consumption of Sugar in the British Atlantic World

Contents

Section I Introduction

I.i Ann Clarke's Recipe Book

In late 1684, in a room in the printers' district of London, Ann Clarke was packing. She had spent the past year alone, staying in London while her husband and son had made their way across the Atlantic. As prominent Quakers, they had been encouraged by the opportunities available in the new colonies. Now it was time for Anne follow them. Although the journey was long, and she was to make it unaccompanied, it is quite possible she would have known a little of the world she was about to inhabit. Her husband, a well-established Quaker bookseller, had been importing publications about the mid-Atlantic colonies for some time before he left. Consequently, she had heard of Ockanickon, an Indian King who controlled the east side of the Delaware River and read about the many sorts of fruits and grains that were grown in the fields there. In 1683, he had published *The Articles, Settlement and Offices of the Free Society of Traders in Pennsilvania* and thus she knew that the land promised the kind of religious and commercial freedoms to which, as Quakers, her small family aspired.[1]

History records little of the moment of her departure, but we can perhaps imagine her surrounded by open trunks and boxes, holding up items, assessing their value – what was worth taking on the long voyage ahead? One item which was prized highly sat separate from the others, a small octavo sized notebook, most of which was empty, save the first few pages which had been lovingly inscribed with a number of recipes for Ann to take with her on her journey to the New World. Seventeenth-century recipe books were not quite the same as those that we know today. They were a mishmash of directions for food preparation, medical advice and general household instructions. Often compiled over a number of years, in a variety of hands, such recipe books would help women like Ann manage her household effectively. Furthermore, the familiar tastes of the dishes which Ann would create in the New World would evoke the smells, textures and flavours of the world she left behind. They would help her tend to the sick and to keep her house in order. There was space moreover, as was customary with manuscript recipe books, for her to continue and extend the volume and to fill it with her own expertise. It was quite likely she intended to pass the book on to her putative daughter-in-law when it came time for her son to make his own family.

[1] Robert W. Craig, 'Benjamin Clarke Sr. and His Diary of the Early Raritan Valley', *The Princeton University Library Chronicle*, 66:3 (2005) pp. 395-397.

Ann's recipe book survives amongst the large collection of the Clarke family in Princeton University Library. [2] Her descendants went on to form a preeminent New Jersey family.[3] Ann did not, however, fill out any more pages with domestic knowledge. While she made it to New Jersey, it is assumed she died soon thereafter. But the few recipes in the book tell us something of the kind of food she prepared in the short time she was in her New Jersey kitchen. She might have made 'Almond butter, my Grandmother Scotts way', a recipe which involved mixing almonds, butter, rose water and sugar together. Or, another day, she might have boiled 'an excellent cordiall water, good for any weak body' which involved taking a quarter of a cockerel's carcass and soaking it in a mixture of claret wine, cream and currants and heating it over a fire. Once this delightful mixture had cooked for long enough, sugar candy was then dissolved into it. She might also have decided to cook up dishes which are more familiar to us today, such as 'a coller of beefe' or 'an excellent cake' or a 'venison pastry'.

Although brief, the recipes in Ann's book reveal something of the daily culinary habits of emigrants to North America. English, and later British, citizens carried with them their consumption patterns when they crossed the Atlantic Ocean. Their diets, desires and tastes travelled with them along with their belongings. This chapter looks at these tastes in greater detail. It is an exploration into the ways in which sugar entered the homes and the mouths of the wider population across the British Atlantic world. In the previous chapter, we arrived at the door of the smoky sugar refinery. Here, we navigate sugar's journey from the refinery further inland. The geographical focus is broader as well. While the investigation of the sugar trade and refineries in Chapter Two centred on England, this chapter, following the path taken by Ann Clark's recipe book, crosses back and forth across the Atlantic Ocean. Sugar drew North American consumers into a sticky web of consumption which crossed the Atlantic Ocean and which incorporated the Caribbean Islands, North America and the British Isles into a constellation of sweetness. By looking at sugar's spread through the consuming environment, we see evidence of a changing economic world on both sides of the Atlantic. Such consumerism convincingly demonstrates the commercialisation of both countries and the ways in which they were orientated towards the transatlantic marketplace. Sugar's

[2] Journal of Benjamin Clarke and His Son Benjamin Clarke, Jr. from Stony Brook and on the Raritan River, N.J., 1680-1720, Box 2 Folder 1, Clarke Family Papers, Princeton University Archives, Princeton NJ. Ann's husband and son repurposed the recipe book as their farming account book.
[3] Robert W. Craig, 'Benjamin Clarke Sr. and His Diary of the Early Raritan Valley', p. 436.

ubiquity speaks to both the development and consolidation of long-distance trade networks and the receptive attitudes of consumers to the goods which travelled along them. Recognising the prevalence of sugar in this early time period provides valuable support for the arguments made in the other chapters which engage more heavily with the historiography of economic change, the development of transatlantic capitalism, and the role played by Caribbean slavery in such narratives. This chapter pulls the chronology of consumption fully into the seventeenth century. The high level of demand that it evidences points to changing consumer habits and their importance for the commercialising and industrialising economies.

I.ii Chapter Structure

I begin the chapter with new calculations for *per capita* consumption of sugar. Using import and export figures divided by the population totals, these calculations establish that more sugar was being consumed by the home population in both England and British North America than previous scholars have argued. They form a key statistical scaffolding for the subsequent exhibition and discussion of a wide range of source material which identifies the role sugar took in the consuming worlds of Early Modern inhabitants of the British Atlantic world. These other sources are various and varied. As I made clear in Chapter One, sugar is curiously absent from much of the historiography of consumption, or it has been lumped together with other new goods and therefore focused and sustained investigation has been limited. Here, I rectify this by tracing the liberal sprinkling of sugar in *inter alia* seventeenth-century recipe books, travelogues, household accounts, social commentary, plays, grocers' wills and medical texts to identify the distinctly sweet flavour of Early Modern palates. Reading the trade statistics alongside these other sources, we see that sugar was available and consumed in the seventeenth century - much earlier and to a greater extent than has previously been recognised.[4]

In Chapter Two, I demonstrated the importance of the growth of domestic sugar refining to a nascent industrial economy which relied on international trade, and showed that more sugar was coming into England than has been acknowledged thus far. Here, I explore the demand which fuelled these developments in trade and industry while turning to North America as

[4] As with any interdisciplinary study, the diverse source material means that there are many methodologies and distinct literatures with which to engage and I have attempted to engage surrounding historiography as fulsomely as possible in the limited space of a DPhil chapter.

well. As Woodruff D. Smith points out, the role of the consumer in the growth of the sugar trade has often been explained as simply the rise of a 'sweet tooth' in the metropolitan environment. But, as he argues, 'a metaphor is not an explanation'.[5] This chapter, in response, brings consumer desire to the forefront. We know that sugar was being grown more plentifully in the Caribbean Islands. In order to understand the advance of the industry, we also need to understand the construction of demand for the good.[6] This chapter demonstrates how this Caribbean product permeated the metropolitan environments of England and the North American mainland. By 1700, sugar had a well-defined place in the consumer environment, with customers willing and ready to consume it. It was consumer demand, I contend, that drove and enabled the commercial success of the sugar trade. In this chapter, I reconstruct the consuming environment.

The chapter progresses in the following manner. It has four distinct sections after this introduction. In *Section II,* I provide more information on the source material being employed and the geographical scope of the chapter. In *Section III,* I turn to the revised figures for *per capita* consumption which form the intellectual bulk of the chapter. In order to contextualise these national-level statistics, in *Sections IV* and *V*, I discuss instances of more local consumption. Investigating the consumption of sugar in its economic and social context requires consideration not only of how it was produced and traded, but also how it was bought and eaten. Here I look at both these two latter aspects of consumption: *Section IV* is an examination of how and where sugar and sugared goods could be purchased. In the last section, *Section V,* I provide more in-depth analysis of the kinds of food, drinks and medicine to which sugar was a key ingredient. At the end of the chapter, in the conclusions, I point briefly to some of the ways in which the evidence accumulated in this chapter is in dialogue with broader narratives of economic change and development.

[5] Woodruff D. Smith, 'Complications of the Commonplace: Tea, Sugar and Imperialism' *Journal of Interdisciplinary History*, 23 (Autumn 1992) p. 259.
[6] Brian Cowan makes this point about the emergence of coffee culture in Britain in *The Social Life of Coffee: The Emergence of the British Coffeehouse* (New Haven, Yale University Press, 2005) p. 261.

Section II Source Material and Geography

II.i Source Material

In order to calculate *per capita* consumption figures I draw on import and export figures, along with calculations of historical population. For England, I use the same trade statistics (with all the accompanying caveats) as Chapter Two. Using 'The Book of Table's and 'The Inspector General's Ledgers' it is possible to calculate new figures for *per capita* consumption in England in the 1663/6 and 1699-1701. While, in the previous chapter, I disaggregated the data, here I look at the total volumes of trade. Home consumption is identified in England by subtracting the total exports and re-exports from the imports and dividing by the population total. National series were not created for North America until the 1770s. Nor is there a North American equivalent for the work done by Ralph Davis on seventeenth-century English foreign trade. This means that calculating a broad-brush figure for early *per capita* consumption is almost impossible, and we lack an important statistical framework for tracking trade. As Carole Shammas writes, therefore, 'The year by year trend in the consumption of sugar by Americans is not known'.[7] However, using export data from the Caribbean islands it is possible to approach a comparable figure for the North American colonies in 1705/6. Here, I reach a notional total by calculating the sum of the Caribbean exports to the mainland, subtracting the subsequent further exports to England and then dividing by the population.[8]

[7] Shammas, *The Pre-Industrial Consumer,* p. 83.

[8] Of course, these figures can only ever be speculative. Consumption of such an expensive good would have varied enormously in sharply unequal societies like those of England and North America in the seventeenth and early eighteenth-centuries. For the historian of consumption these broad-brush approximations seem miles away from immediate moments of purchase or of eating by ordinary people. It is therefore not surprising that there are relatively few studies which pursue the question of sugar's distribution. In the second part of this chapter, I attempt to rectify this.

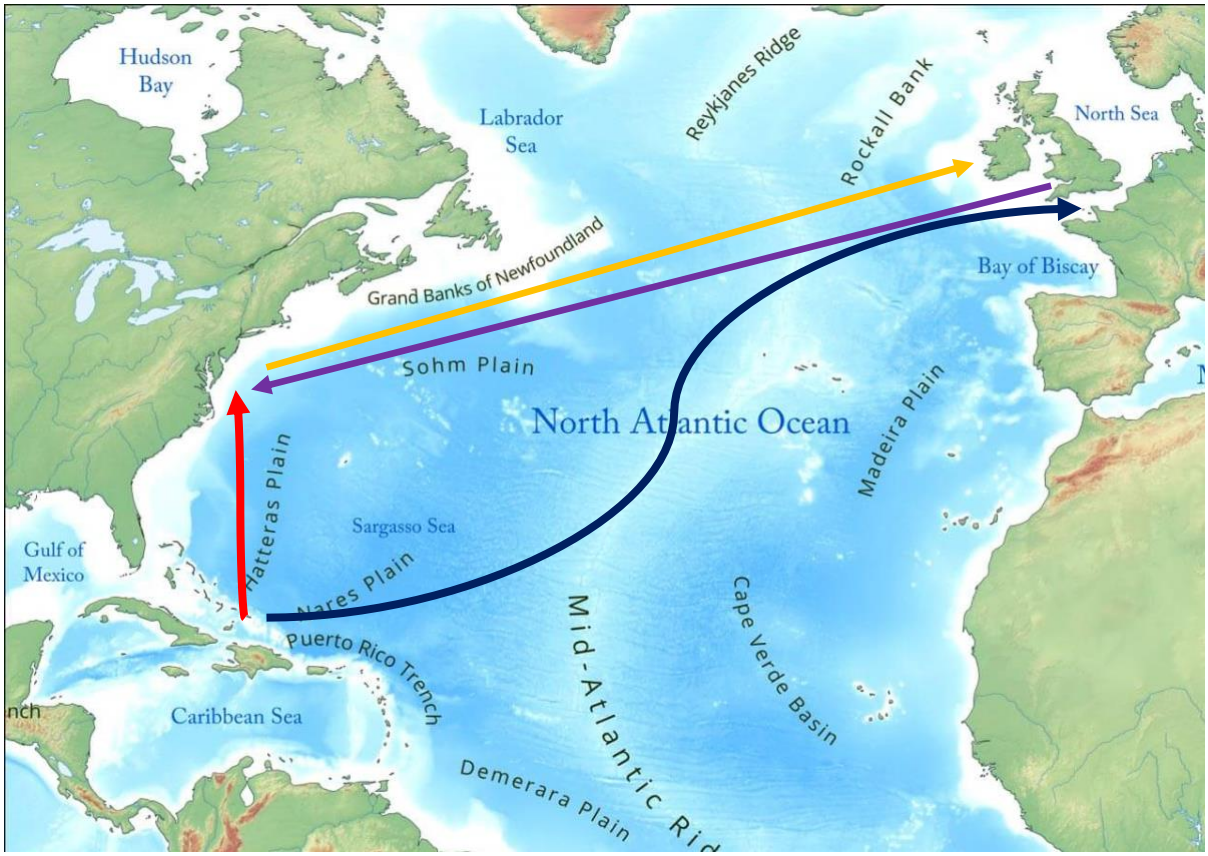


Image I Map Showing Direction of Trade in Sugar. Sugar was shipped in a number of directions: directly to the British Isles (black arrow), directly to North America (red arrow), from North America to the British Isles (yellow arrow), and from British Isles to North America (purple arrow).

The trade statistics used to calculate *per capita* consumption demonstrate the important fact that more sugar was available in both countries at an earlier point than has been recognised. They do not, however, tell us about how sugar made its way into the consuming environment. To trace this, we must turn elsewhere. The extant sources which can tell us about sugar consumption are, as I say above, both various and varied. They range from household accounts, recipe books, grocers' account books and university ledgers to angry letters written back to England by colonial administrators. I blend printed and archival sources, since these reinforce each other and can be woven together to form a strong body of evidence. I read these sources in a critical and exploratory exercise, often taking characteristically 'elite' sources, such as the household accounts of wealthy families, to show how they also reveal (if considered carefully), the consumption patterns of non-elites.[9]

[9] The account books of wealthy houses are a good example of this activity. They often recorded expenditure on servants' diets. In the period under consideration, Ann Kussmaul found that servants made up 13.4% of the total English population, and 'around 60 per cent of the population aged fifteen to twenty-four'. Servants' consumption of sugar therefore, is one way in which we can think about the consumption patterns of non-elites. See: Ann Kussmaul, *Servants in Husbandry in Early Modern England* (Cambridge, Cambridge University Press, 1981) p. 3.

In the seventeenth century, the British Atlantic was a burgeoning consumer society, its inhabitants engaged in acquiring new goods. As we have seen, sugar was already well established as a consumer good. In Chapter One, I argued that there is a lack of material and visual evidence from seventeenth century England and British North America which exemplifies the pervasiveness of sugar. The good, however, was a key ingredient in *other* foodstuffs and other beverages, enhancing and changing their flavour and often simply disappearing into food and drink which did not leave behind the same material evidence. In this chapter, therefore, I draw on new archival sources which, although without the same visual power, serve to demonstrate the widespread nature of sugar consumption.

These new sources provide a narrative which differs from previous descriptions of sugar consumption, particularly with respect to the diets of non-elites in England. Strikingly, Robert Allen, whose consumption baskets for England are widely reproduced, does not include sugar in his calculations.[10] Craig Muldrew is warier of making assumptions about Early Modern diets based on prices and wages, arguing that 'what labourers ate was much more varied than we are often led to believe'.[11] However, he does not apply such logic to sugar consumption and does not provide extensive analysis of the good in *Food, Energy and the Creation of Industriousness*.[12]

[10] Consumption bundles are comprised of a variety of goods that are supposed to reflect average consumption patterns. The changing prices of the component goods can then be tracked and aggregated into a changing overall cost. According to economists this is 'the cost of living'. Estimates on the cost of living are used to deflate nominal wages in order to calculate their real purchasing power. Robert C. Allen, whose baskets are very widely reproduced, uses them to provide evidence for the high wage economy in the U.K. in both his article 'The Great Divergence in European Wages and s' (and his book *The British Industrial Revolution in a Global Perspective*). Allen does not include sugar in his baskets as it difficult to introduce new goods into the basket and the idea is more to provide a consistent and comparable set of goods rather than to track consumer preferences. Allen lumps sugar into the category of luxuries outside the subsistence basket which contributed to the 'consumer revolution' and reinforces this by citing Somerville's 1843 budgets where sugar does not appear in the budgets of the very poorest. (*The British Industrial Revolution,* pp. 25-56.) Omitting new food stuffs, however, creates an artificially static basket, one that does not allow for changes in economic activity and consumer choice. It does not track the way that goods disseminated through the socio-economic hierarchy. We know that diets changed over time, even those of the poorest. We see that sugar did become far more widespread, at perhaps an earlier time than we first thought. Robert C. Allen 'The Great Divergence in European Wages and Prices from the Middle Ages to the First World War' *Explorations in Economic History*, 38 (2001) and *The British Industrial Revolution in a Global Perspective* (Cambridge, Cambridge University Press, 2009).

[11] Craig Muldrew, *Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780* (Cambridge, Cambridge University Press, 2011) p. 11.

[12] Muldrew is struck by the amount of sugar the yeoman farmer Richard Latham is able to purchase 'given his low-level of expenditure' but does not investigate the availability of sugar or the inclusion in labourers' diets in any more detail. Muldrew, *Food, Energy and the Creation of Industriousness,* p. 56.

Scholarly attention has been paid to the diets of Early British Americans, but sugar does not feature widely in these studies.[13] Indeed, Wendy Woloson argues that the high level of British consumption impeded the growth of American consumption, as more sugar was shipped to Europe and less was available for North American consumers.[14] However, sugar arrived in North America with the very first settlers from England. In 1636, one of the first laws enacted by the Massachusetts Bay Colony was to tax imports of sugar, wine and spice.[15] In 1642, the travel writer Edward Johnson wrote of New England that 'this poor wilderness hath not only equalised in food, but goes beyond it in some places for the great plenty of wine and sugar'.[16] You can find references to sugar like this scattered through printed accounts of life in seventeenth-century America: whether it be the diarist's John Marshall's lament that a hogshead of sugar fell and killed a worker in Boston,[17] or the travel writer Daniel Denton's bucolic description of June in New York, where during strawberry season, the 'country people…instantly arm themselves with bottles of Wine, Cream, and Sugar, and so rushing violently into the fields, never leave till they have disrob'd them of their red colours, and turned them into the old habit'.[18] The first continuous newspaper, *The Boston News Letter*, was printed in Boston in 1704, and the inaugural edition records the progress of ships arriving into port from the sugar islands.[19] As the trade figures show, sugar from the British islands did not just travel eastwards back to Europe, but also made its way up north to the mainland colonies. Just as the English appetite for sweetness was increasing in the late seventeenth century, so was the American. Thus, by looking at local on-the-ground economic activity shown in the sources, we are able to access a wider impression of the origins of the sweet tooth in the British Atlantic World.

[13] Sugar consumption is curiously absent from or very limited in Lorena S. Walsh 'Urban Amenities and Rural Sufficiency: Living Standards and Consumer Behavior in the Colonial Chesapeake, 1643–1777', *The Journal of Economic History,* 43 (1983) pp. 109-17, and Laurel Thatcher Ulrich, *Good Wives: Image and Reality in the Lives of Women in Northern New England*, *1650-1750* (New York, Knopf, 1982).
[14] Woloson, *Refined Tastes,* p. 23.
[15] N. B. Shurtleff (ed.) *Records of the Governor and Company of the Massachusetts Bay in New England*, 5 Vols. (Boston MA., W. White: Printer to the commonwealth, 1853-54) Vol. II, p. 186.
[16] J. Franklin Jameson (ed.) *Johnson's Wonder-Working Providence 1628-1651* (New York, C. Scribner and Sons, 1910) p. 210.
[17] S. A. Green (ed.) *Extracts from John Marshall's Diary* (Cambridge, Harvard University Press 1900) p. 9.
[18] Daniel Denton, *A Brief Description of New-York, Formerly Called New-Netherlands* (London, 1670) p. 4.
[19] *The Boston Newsletter*, April 1704, Massachusetts Historical Society [https://www.masshist.org/database/186) Accessed: May 2020]

II.ii Geography

Before I turn to these sources, I outline the geographical scope of the study, well aware that writing about an area as large and diverse as 'Colonial British North America' is not without contention and that 'England' also needs explanation.[20] In discussing American consumption, the geographic scope of this study covers the early British settlements on the north-eastern seaboard, crossing New England and the mid-Atlantic regions. The majority of the material comes from the Boston area, but it spreads south to Philadelphia and eastern New Jersey. England's, and then later Britain's, colonizing projects extended much further but in the space of this thesis, I stick to a more limited geography - always remembering, however, that topography was an essential distinguishing factor of the American marketplace. Seventeenth-century colonizers who arrived on the shores of the continent were met with an immense and dizzying expanse of land, acres unimaginable to previous inhabitants of a tiny island nation. Where the marketplace they had left behind them was a recognizable actual *place*, the market square of local town, regulated by a number of institutions both local and national, colonizers were met with a vast land mass devoid of any such familiar fixed location. Instead, they came face to face with local economies which had much more 'fluid and varied market models' and had to adapt accordingly. [21] The marketplace in British North America was less a geography than a concept, and an elusive one at that. As Emma Hart has shown for the eighteenth century, the American marketplace was malleable, and defied easy categorization, even less regulation. Trading did not take place in one fixed sphere but crisscrossed the extensive landscape, sometimes right off the boat, sometimes at points much further inland. Itinerancy was the norm, and barter was more common than specie. And yet, this was not the economic backwater that is characteristic of early scholarship on colonial American economy. Following on from recent developments in the economic history of early America, this research on sugar provides further evidence for the integration of the American economy into international trade networks.[22]

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[20] The time and space constraints of the DPhil project meant that I could not look in depth at Caribbean consumption of sugar in this chapter. This is clearly an important facet of British Atlantic consumption and key to understanding it fully. It is one of the ways I hope to develop the project in later versions.

[21] Hart, *Trading Spaces*, p. 34.

[22]James Henretta espoused the argument for Colonial North American self-sufficiency most forcefully but this view has been subsequently challenged comprehensively. See James Henretta, 'Families and Farms: Mentalité in Pre-industrial America', *The William and Mary Quarterly*, 35 (1978). Subsequent scholarship has emphasised the integration of the North American economy with the rest of the Atlantic market. See: R. L. Bushman, 'Markets and Composite Farms in Early America' *The William and Mary Quarterly*, 55 (1998); Carole Shammas, 'How Self-Sufficient Was Early America?', *Journal of Interdisciplinary History*, 13 (Autumn 1982), and T. H. Breen, 'An Empire of Goods: The Anglicization of Colonial America, 1690– 1776', *Journal of British Studies*, 25 (1986).

The historiography of the English market does not suffer from misconceptions about self-sufficiency. However, the early penetration of imported goods into rural areas is more contested (although the work of Jon Stobart has done much to rectify this) and my discussion of sugar refineries in the previous chapter shows that sugar spread around England during the seventeenth century.[23] It is undeniable that Londoners were the greatest consumers. As I have discussed in previous chapters, London remained the central port for sugar imports and exports, and the prodigious appetites of Londoners were noted by social commentators.[24] Thomas Tryon noted in 1698 that it was 'tradesmen and the artificiers', with their high wages who were able to consume the greatest amount number of imported delicacies. It was they who were the most 'abundant consumers' of 'sugar, spices, Spanish fruits, tobacco, and wines too' and increasing consumption by Londoners had 'of late years mightily encouraged Importation and Exportation' to the benefit of the English economy. In this chapter, I build on Stobart's arguments to show that sugar penetrated the rural heartlands of the country. By looking at the household accounts of wealthy Devonshire family from their Derbyshire properties Chatsworth and Hardwick Hall, I indicate some of the ways in which consumer trends in London spread out across the country. The affluent Devonshires bought prodigious amounts of sugar which they were able to obtain from their local grocers when they stayed in their country houses. The sources employed here show that sugar was mobile. It travelled by river, cart and coach into the countryside and into the mouths of willing, some might even say greedy, consumers across England. Before looking at the spread of sugar through the two countries, I focus on the statistics which record trade in sugar to calculate new figures for *per capita* consumption. This will give us a picture of national trends.

[23] In *Sugar and Spice,* as I discussed in Chapter I, Stobart demonstrates the penetration of imported groceries into rural areas of Britain in the seventeenth and eighteenth centuries.
[24] Thomas Tryon, *Some General Considerations Offered, Relating to Our Present Trade. And Intended for its Help and Improvement* (London 1698) p. 10.

Section III: New Estimates for Per Capita Consumption

III.i England:

Table 1 Per Capita Consumption of Sugar in England 1663/9 and 1699-1701

		London 1663/9	Country 1663/9		London 1699-1701	Country 1699-1701
Imports	**£ (000)**	292.71	350.10		527.17	630.52
	CWT (000)	183.72	219.72		408.58	488.65
Exports	**£ (000)**	31.79	33.84		30.20	32.16
	CWT (000)	39.54	42.12		10.31	10.98
Re-exports	**£ (000)**	0.00	0.00		261.86	286.54
	CWT (000)	0.00	0.00		131.66	145.46
Remaining	**£ (000)**	260.93	346.08		235.10	311.82
	CWT (000)	144.18	179.65		266.61	332.21
Population			5070620			5033255
P/C Per Year	**CWT (000)**		0.00004			0.00007
	CWT		0.035430542			0.066003034
	lb		3.97			7.39

(Sources: BL Add MS 36785, PRO Cust 3/3-5, and E.A. Wrigley and R.S. Schofield, *The Population history of England, 1541-1871: A Reconstruction* (London, Edward Arnold, 1981) p. 532.)

Notes to *Table 1*

1. In Appendix B, I give details of how I came to these totals, and explain how these figures are different to previous calculations, most importantly why they are corrections to Shammas and Sheridan's numbers.

2. It is important to note here, however, that to come to an estimate of the total trade for the country for 1666-9, I assumed that the relationship between London and the outports was the same for both the early and later period. This follows Davis's method, who writes that 'the only possible course is to assume that the import/export relation was much the same in the 1660's as at the end of the century'. [25]

[25] Davis, 'English Foreign Trade', p. 159.

3. My figure for total imports includes brown and white sugar. We do not know just how much of this sugar was then refined. Refining reduced the weight of sugar by about 50%, meaning that in reality there would be a smaller volume of sugar circulating.[26]

4. To counter this, as the numbers come from official statistics, they do not give any indication of the volume of sugar smuggled into the country. Smuggling was an important part of the economy but cannot be quantified in anyway. Sugar was either smuggled into the country via coastline not under the gaze of customs officials, or, perhaps more frequently, through the underweighting or mis-labelling of goods that came through ports. This was the case in 1790, when an investigation at Port Glasgow revealed that two land-waiters had colluded with Glasgow merchants to underweigh sugar casks in order to reduce the duty to be paid.[27]

[26] Joseph Massie, *A computation of the money that hath been exorbitantly raised upon the people of Great Britain by the sugar-planters, in one year, from January 1759 to January 1760; shewing how much money a family of each rank, degree, or class hath lost by that rapacious monopoly having continued so long after I laid it open, in my state of the British sugar-colony trade, which was published last winter* (London, 1760)
[27] Henry Atton and Henry Hurst Holland, *The King's Customs: An account of Maritime Revenue & Contraband Traffic in England. Scotland, and Ireland, from the Earliest Times to the Year 1800*, Vol.1 (New York, E.P. Dutton & co., 1908-1910), pp. 421-422.

III.iii North America:[28]

Table 2 Per Capita Consumption of Sugar in British North America 1704-6

Country	Imports
Jamaica (1704)	4210
Barbados	8233
Monsterrat	2741
Nevis	3137
Antigua	6005
Total (CWT)	24326
minus 10% for leakage	21893.4
Total (lb)	2189340
minus total exports to England *+10% for leakage* (lb)	988051.35
plus total imports from England *-10% for leakage* (lb)	7317.90
Total (lb)	1208606.55
Population	250888
P/C Per Year (lb)	4.82

(Source: McCusker, *Rum and the American Revolution*, pp.143, 166, 183, 190, 208. PRO CUST 3/8 and 3/9, U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.)

[28] See Appendix C for a more detailed description of this calculation. This figure is a far more rough and ready approximation than that for England as the data is less comprehensive.

III.iii Comparing English and American Consumption[29]

Table 3 English and North American per capita consumption at the turn of the eighteenth century

	England 1699-1700		North America 1704-6
lb/person	7.39		4.82 5.39 (adjusted)

Comparison of the two countries is made difficult because of the lack of data for the early part of the century for North America. In the later period, English consumption looks much higher than American: 7.39 lbs per person compared to 4.82 lbs, or 25% more. However, for the sake of argument, and as a way of compensating for the downward bias, if we were to include the export figures from the island of St Christopher which are dated to 1678, we arrive at a figure of 5.39lbs per person, somewhat closer to that of Britain.[30] It is likely that the numbers were even closer because of significant smuggling into North America (which I discuss immediately below). While tentative, these numbers provide an interesting starting point. The most important immediate implication is that more sugar was being consumed in both countries. For England, the volume for the 1660s is almost double that calculated by Carole Shammas. The figure for 1700s is in line with that calculated by Nuala Zahedieh who suggests that by the end of the seventeenth century, English consumption 'could have been as

[29] In order to compare the English numbers accurately with Davis' figures, I did not include rum in the original calculation for English *per capita* consumption. However, in order to accurately compare English consumption and North American consumption, I need to include rum. Rum does not appear in the Book of Tables from the 1660s. Over the course of the three years from the end of the century, the English imported on average 81.2 cwt of rum. They did not export any. This does not change the *per capita* consumption figure when rounded to 2 decimal places. It remains at 7.39 lbs per person. While McCusker suggests that all imports of liquors from the colonies, no matter what their label, were rum during this period, I have been more conservative and only include the volumes expressly designated as being rum. Rum became a much more significant part of British people's diet later on. The diaries of Captain James Cook from the 1760s show that he allocated a pint per sailor per day. It had yet to infiltrate the diets of the English at this early point. (See McCusker, *Rum and the American Revolution,* p. 899 and Richard Hough, *Captain James Cook – A Biography* (London, Hodder, 1994) p. 342).

[30] This is a far from perfect solution as the imports from St Christopher's were never consistent. The island was transferred from French to English possession and back again many times over this period and sugar production was limited due to a severe shortage of labour on the island. See Brian Dyde, *Out of the Crowded Vagueness: A History of the Islands of St Kitts, Nevis and Anguilla* (Oxford, Macmillan Caribbean, 2015) pp. 67-77.

high as 7lbs per person annually'.[31] These figures therefore support the main argument of the thesis: that sugar consumption increased over the course of the seventeenth century.

To date there has been no attempt to estimate early American consumption and therefore the calculation here breaks new ground in providing a rough benchmark. It shows the figures for each country to be closer than we might imagine. Contrary to the argument which suggests that America lagged behind England in terms of sugar consumption, these figures suggest that the two countries had similar consumption patterns in this early period. North American consumers were active participants in the Atlantic trading environment. In fact, it is likely that these number are significant under-estimates, mostly because of the amount of sugar smuggled into North America.

III.iv Smuggling into North America

Smuggling sugar into North America from non-British areas of the Caribbean is not accounted for in these statistics and is the key point of difference between the two countries. Sugar was smuggled into the country in significant amounts, with more arriving than could have been captured in official records. Were we able to calculate the volumes smuggled, the figures for both countries would likely look much closer. The extent of the coastline had a huge effect on the sugar trade into America. The amount of sugar arriving into North America outside the gaze of the customs officials was substantial. Whilst superficially, England controlled the imports and exports through her North American ports and demanded that goods be taxed accordingly, with the customs revenue directed to the crown's coffers, the topography of the coastline allowed for many violations of the taxation policy. The numerous creeks and eddies, hidden coves and inlets, provided smugglers with excellent cover for their illicit activity in bringing in sugar from French, Danish and Dutch islands and avoiding taxation.[32]

The bureaucratically-minded English civil servant, Edward Randolph, was sent to North America in order to monitor the contraband behaviour. His enraged letters back to England

[31] Zahedieh, *Capital and the Colonies*, p. 221.
[32] Shammas writes that the amount of sugar products smuggled in would be 'considerable'. John J. McCusker argues that while there was no sugar, or at least negligible amounts, coming into North America from the Spanish Colonies, substantial amounts were being smuggled in from other European colonies. See Shammas, *The Pre-Industrial Consumer*, p. 83 and McCusker, *Rum and the American Revolution*, pp.90-111, 303, 311.

document his frustrations colourfully. He describes the ways in which the acts were continually flouted, especially in the illegal importation of sugar. In a vividly named document, written in 1683, *Articles of High Crimes & Misdemeanors exhibited against ye Governor & Company of the Massachusetts Bay,* Randolph enumerated the ways in which Bostonians flouted the English Navigation Laws, writing that 'They have sett up a navel office in opposition to his majesties customs there, the better to secure the collecting of their own illegal imports and to evade the acts of parliament for regulating the plantation trade…'[33] Randolph cuts an amusing figure, almost a caricature, in his role as an officious, scurrying civil servant, rushing up and down the coast, his beady eyes intent on catching petty criminals. He was often thwarted in his endeavours, his letters revealing occasions on which he identified a ship carrying illegal goods, only to arrive at port to find it 'stollen away'.[34] He reported that the merchants of Boston continually spurned his authority 'acting as high as ever' and 'trading as freely as formerly' and that sugar was 'in every man's mouth [as if] they are not subject to the laws of England'.[35]

Molasses flowed freely between non-British islands and the American mainland. Before 1733, when the British government decided to tax imports of the good from other colonies in an attempt to monopolise the trade, the French, Spanish and Dutch West Indies all supplied British Colonial America with molasses. All of these islands were producing sugar in greater and greater quantities but there was little market for the molasses produced alongside it back home in Europe. Molasses was seen chiefly to be an ingredient for rum. The French were prohibited from exporting the liquor back to Europe out of 'deference to the French brandy interests'.[36] Consequently in return for the necessary staples which North Americans provided, the non-British islands traded their surplus molasses northwards. None of this is captured by the British islands' export data. Whatever figure we arrive at for total imports during this earlier period will therefore be an underestimate. Not knowing how much sugar and molasses came from other islands is the point which skews the data and the *per capita* figure most significantly. Furthermore, the sheer amount of molasses available to North

[33] Edward Randolph, *Articles of High Crimes & Misdemeanors Exhibited against ye Governor & Company of the Massachusetts Bay* (1683, June 12), BL 228, Blathwayt Papers, Huntington Library, California.
[34] A. T. S. Goodrick and R. N. Toppan (eds.), *Edward Randolph Including His Letters and Official Papers from the New England, Middle and Southern Colonies in America*, 7 Vols. (Boston, Printed for The Prince Society by John Wilson & Son, 1898-1909) Vol. III, p. 346.
[35] A. T. S. Goodrick and R. N. Toppan (eds.), *Edward Randolph Letters*, Vol. II, p. 60.
[36] Gilman M. Ostrander, 'The Colonial Molasses Trade', *Agricultural History*, 30 (1956) p. 78 and Stewart Lea Mims, *Colbert's West India Policy* (New Haven, Yale University Press, 1912) p. 220.

American consumers altered many of their consumption patterns. Molasses sweetened their rum and beer as well as many of their cakes and puddings. While there are many similarities between English and American consumption patterns, we will see throughout this chapter that this sweet sticky treacle helped to form distinctively American palates and some of the nation's most famous recipes, like pumpkin pie.[37]

III.v Distribution and Mass-Consumption and Disposable Income

The criticism to level at *per capita* figures is that they tell us nothing of distribution throughout the population and therefore progress towards mass-consumption. Carole Shammas suggests the for a person to be regularly sweetening food or drink with sugar 'required about 24 pounds a year'. This translates into just over ounce a day, about twenty-eight grams or 7 sugar cubes. Using her *per capita* figures, Shammas calculates that by 1700, about 900,000 people would be able to consume 24lbs but admits that 'in reality, probably a small group consumed more than 24 pounds, and most consumed less'.[38] In Appendix B, I outline the ways in which I differ from Shammas's calculations. However, using her figure of 24lbs per year, my *per capita* calculation of approximately 4 lbs and 7.4lb for the 1660s and 1700s respectively, would mean that in the 1660s around 830 000 people could consume 24lbs and by 1700, 1.5 million could. These are large figures for a population around 5 million. In America, the number is around 50 000 people out of a population of 250 000 – again around 1/5th. I agree with Shammas, it is much more likely that some people ate more than 24 lbs a year, and many ate a lot less.

Estimates for disposable incomes give us some indication of how much could be spent on sugar. For England, Craig Muldrew gives totals for an average income for a labouring family and average family budget over the seventeenth century. I reproduce them here.

[37] I look in more detail at the conflict caused by molasses and at the consequences of the diverging tastes of the English and their North American counterparts in Mimi Goodall, 'The Rise of the Sugar Trade and Sugar Consumption in Early British America, 1650–1720' *Historical Research*, 93:262 (2020). See Alison Kelly, 'A brief history of pumpkin pie', Blog post from the Library of Congress. Accessed April 2021 (https://blogs.loc.gov/inside_adams/2017/11/a-brief-history-of-pumpkin-pie-in-america/).
[38] Shammas, *The Pre-Industrial Consumer*, pp. 82-83.

Table 4 Incomes and Expenditures of a Labouring Family in England

	Earnings of man, two sons, wife, daughters, and some smallholding	Total expenditure per annum
1625	£38 15s 0d	£40 9s 0d
1680-1690	£47 19s 0d	£43 18s 0d
1740-1760	£53 8s 0d	£34 14s 0d

Source: Craig Muldrew, *Food, Energy and the Creation of Industriousness*
Earnings: Tables 5.19 and 5.4
Expenditure: Table 5.3
Muldrew's dates between tables are not always consistent thus ranges are given.

While Muldrew's figures for 1625 suggest an income deficit, they do indicate that by the 1680s, a middling family would have spare cash to spend on items outside basic necessities – greater volumes of sugar for example. Robert Allen's recalculation Gregory King's tables for the population structure in the 1680s gives a total of 1 383 303 families who were either 'farmers' or 'workers' and might be able to go out and purchase increasing volumes of sugar.[39] It is also possible to turn to the table created by Joseph Massie in 1760 (*Image II*). Although out of the period of the thesis, and focusing more heavily on consumption of tea and coffee, Massie calculated roughly how much sugar was consumed by various sectors of the population. He was attempting to demonstrate how much tax had been levied against these consumers by the sugar planters. Annual imports by 1760 had reached 1 605 000 cwt, about 4 times as much in 1700 and thus the total numbers are much greater than they would have been in the previous century. Nevertheless, the table is a helpful indication of the range of consumption. The very wealthiest families might consume up to 7420 lbs per annum, the poorest only 12 lbs a year.

We do not have equivalent source material for British America during the same period and thus it is more difficult to ascertain levels of disposable income. Nonetheless, McCusker and Menard make, what they call, conjectural estimates for income in the thirteen colonies from

[39] Robert C. Allen, 'Class Structure and Inequality During the Industrial Revolution: Lessons from England's Social tables, 1688–1867', *Economic History Review*, 71:1 (2019) p. 105.

1650-1774 and assume a real annual growth rate of 0.6% *per capita* over the period.[40] Demand intensified on a *per capita* basis as individual levels of wealth rose.[41] The remainder of this chapter is an exploration of more qualitative source material which gives us an indication of just how sugar was consumed by different sectors of the population.

[40] McCusker and Menard, *The Economy of British America,* p. 17.
[41] McCusker and Menard, *The Economy of British America,* p. 278.

A COMPUTATION of the MONEY that hath been exorbitantly Raiſed upon the People of *Great Britain* by the *Sugar-Planters*, in One Year, from *January* 1759 to *January* 1760; ſhewing how much Money a Family of each Rank, Degree, or Claſs hath loſt by that rapacious Monopoly having continued ſo long after I laid it open, in my State of the *Britiſh* Sugar-Colony Trade, which was publiſhed laſt Winter.

N°	Ranks, Degrees and Claſſes.	For One Family of each Rank, &c. Annual Incomes or Expences *L.*	Annual Conſumption of Sugar *, lb. weight	Money exorbitantly raiſed. *L.* *S.* *D.*	Money exorbitantly raiſed on all the Families, at *l.* 1. 3. 4. *per* 112 lb. of Muſcovado or brown Sugar *L.* *S.* *D.*
	Families which drink Tea, Coffee, *or* Chocolate, *Morning and Afternoon.*				
1		20,000	7,420	77 5 10	772 18 4
2		10,000	3,920	40 16 8	816 13 4
3		8,000	3,220	33 10 10	1,341 13 4
4	Spiritual Lords	6,000	2,520	26 5 —	2,100 — —
5	Temporal Lords	4,000	1,820	18 19 2	3,033 6 8
6	Baronets	2,000	1,260	13 2 6	4,200 — —
7	Knights	1,000	1,020	10 12 6	6,800 — —
8	Eſquires	800	750	7 16 3	6,250 — —
9	Gentlemen	600	650	6 15 5	10,833 6 8
10		400	550	5 14 7	18,333 6 8
11		300	360	3 15 —	18,000 — —
12		200	320	3 6 8	21,333 6 8
13	Merchants	600	600	6 5 —	6,250 — —
14	———	400	480	5 — —	10,000 — —
15	———	200	350	3 12 11	36,458 6 8
16	Tradeſmen	400	480	5 — —	12,500 — —
17	———	200	350	3 12 11	18,229 3 4
18	———	100	240	2 10 —	25,000 — —
19	Maſter Manufacturers	200	400	4 3 4	10,416 13 4
20	———	100	280	2 18 4	14,583 6 8
21	Clergymen, ſuperior	100	350	3 12 11	7,291 13 4
22	Perſons profeſſing the Law	100	280	2 18 4	35,000 — —
	Families which drink Tea, *or* Coffee *in the Morning.*				
23	Tradeſmen	70	120	1 5 —	25,000 — —
24	———	40	80	— 16 8	83,333 6 8
25	Maſter Manufacturers	70	100	1 — 10	10,416 13 4
26	———	40	80	— 16 8	41,666 13 4
27	Clergymen, inferior	50	120	1 5 —	11,250 — —
28	Perſons profeſſing liberal Arts	60	100	1 — 10	18,750 — —
29	Civil Officers	60	100	1 — 10	16,666 13 4
30	Naval Officers	80	140	1 9 2	8,750 — —
31	Military Officers	100	160	1 13 4	3,333 6 8
32	Inn-keepers and Ale ſellers	100	140	1 9 2	2,916 13 4
33	———	70	120	1 5 —	3,750 — —
	Families which drink Tea *or* Coffee *occaſionally.*				
34	Freeholders	100	112	1 3 4	35,000 — —
35	———	50	56	— 11 8	35,000 — —
36	———	25	40	— 8 4	50,000 — —
37	Farmers	150	112	1 3 4	5,833 6 8
38	———	100	56	— 11 8	5,833 6 8
39	———	70	50	— 10 5	10,416 13 4
40	———	40	30	— 6 3	37,500 — —
41	Inn-keepers and Ale-ſellers	40	30	— 6 3	6,250 — —
	Labouring Families, &c.	Weekly Wages. *S.* *D.*			
42	Manufacturers of Wood, Iron, &c.	9 0	18	— 3 9	18,750 — —
43	——— of Wool, Silk, &c.	7 6	18	— 3 9	18,750 — —
44	Huſbandmen	6 0	12	— 2 6	25,000 — —
45	Labourers	5 0	12	— 2 6	25,000 — —
46	Manufacturers of Wood, Iron, &c.	12 0	18	— 3 9	2,812 10 —
47	——— of Wool, Silk, &c.	10 6	18	— 3 9	2,812 10 —
48	Labourers	9 0	12	— 2 6	2,500 — —
		Annual Incomes.			
49	Common Seamen, Fiſhermen, &c.	£. 20	12	— 2 6	7,500 — —
50	Ale-ſellers, Cottagers	20	12	— 2 6	2,500 — —
51	Common Soldiers	14	6	— 1 3	1,125 — —
	Totals for *England* and *Wales* . . 56,282 Hogſheads, 10 Cent. 72 lb.				787,960 8 4
	Remains for *Scotland* . . . 3,717 . . . 1 . . 40				52,039 11 8
	Totals for all *Great Britain* . . 60,000 Hogſheads, (the uſual Quantity conſumed yearly) . .				840,000 — —

* Thoſe Noblemen, Gentlemen, Freeholders, Farmers, Merchants, Tradeſmen, *&c.* who ſhall be deſirous of examining my Computation for a Family of their own Rank, &c. ſhould reckon Two Pounds of *Muſcovado* or *brown Sugar* for each Pound of *Loaf Sugar* that is conſumed by their Families, for 2 *lb.* of *brown* doth not yield 1 *lb.* of the fineſt *Loaf Sugar*; and *Three* Pounds of *brown Sugar* are to be reckoned for every *Two* Pounds of *Powder Sugar*, or of *Sugar* that is nearly white, the latter of which is called *clayed Sugar*, becauſe *Clay* is uſed in refining it.

Every Maſter of a Family, who hath kept Houſe Twenty Years, may moderately reckon that he hath loſt *Ten Times* as much Money by the Sugar-Planters Exorbitance, as he finds his Loſs by them to have been in the laſt Year; for their Monopolizing of Sugar has continued about Twenty Years, in which Time, according to a Computation in my State of the Sugar-Colony Trade, the ſaid Planters have exorbitantly raiſed upon the People of *Great Britain*, no leſs than EIGHT MILLIONS OF POUNDS Sterling, *over and above very good Profits*; and not only that Computation, but the Whole of what I have computed, and the various other national and great Loſſes which I have there charged the Sugar-Planters with, are in a Manner confeſſed to be in Subſtance true, by their not having ſo much as endeavoured to *publicly clear themſelves* from the ſame; nor can it anſwer any real and juſt Purpoſe for thoſe Planters to attempt invalidating what I have written concerning their Trade and their Miſdoings, becauſe the moſt eſſential Parts thereof are founded upon Vouchers of public Authority, or ſtated according to the Accounts and Evidence of their own Advocates, after rectifying ſome very great and evident Errors therein.—

J. Maſſie.

N. B. *Eight Hundred and Forty Thouſand* Pounds (the Total of this Computation) will more than *pay* and *cloathe* for one Year, an Army of Forty Thouſand *Britiſh* Foot Forces.

January 10. 1760.

Image II A reproduction of Joseph Massie, *A computation of the money that hath been exorbitantly raised upon the people of Great Britain by the sugar-planters, in one year, from January 1759 to January 1760; shewing how much money a family of each rank, degree, or class hath lost by that rapacious monopoly having continued so long after I laid it open, in my state of the British sugar-colony trade, which was published last winter* (London, 1760)

Section VI Buying Sugar

Having established that more sugar was coming into both countries than has been hitherto recognised, we now turn to consider its penetration into the early modern Atlantic consuming environment and the ease with which sugar products could be first bought and then eaten. Where might a seventeenth-century consumer buy sugar and sugared goods in England and the North American colonies? Recent literature on the history of shopping has emphasized the importance of space to our historical understanding of consumption.[42] The environments in which customers purchased sugar, and the means by which they did so, are an important element in the understanding of consumption more broadly. They tell us how sugar would have been distributed across the population, adding granular detail to the *per capita* consumption figures calculated above. These spaces of consumption also tell us more about the availability of sugar to different consuming sectors and the ease with which consumers could access it – whether in the form of basic molasses, of double refined sugar, or any of the interim forms in which sugar was produced, traded, sold, cooked, and eaten.

The expansion of refineries discussed in the previous chapter helps to demonstrate the widespread availability of sugar, which evidently travelled far beyond the large copper stills of the urban refinery. This is confirmed by Jon Stobart's research, which shows that sugar was available throughout England in the seventeenth and eighteenth centuries, and that it furnished the shelves of a wide variety of shopkeepers.[43] The shopping patterns of the Lancaster grocer William Stout are a good example of how a retailer would source sugar during this period. Stout did not have a consistent source of sugar throughout his lifetime, rather he drew upon a wide network of traders to stock his shelves. When he first set up his own shop in 1687, he travelled to London and spent £200 on his initial inventory. By 1689 however, he bought sugar from closer to home. His neighbour, John Hodgson, had set up a sugar refinery in Lancaster for refining sugar, which 'supleyed us [Stout and his colleagues] with sugar and melosses'. In 1692, Stout makes his own journey to Liverpool to collect sugar, exclaiming that it was sold 'loose and in bulk like salt for want of cheap hogsheads'.[44]

[42] See Jon Stobart, Andrew Hann and Victoria Morgan (eds.), *Spaces of Consumption: Leisure and Shopping in the English Town, c. 1680-1830* (London, Routledge, 2013).
[43] See Stobart, *Sugar and Spice* and 'Overseas Goods in Local Shops' *passim* and a lengthier discussion of Stobart's work in Chapter One (pp. 37-38).
[44] Stout, *Autobiography*, pp. 21, 26, 35.

Throughout the rest of his life (he died in 1752) Stout imported sugar from across the country. His activities support Stobart's most important argument about the widespread nature of the grocery trade. In *Sugar and Spice*, Stobart demonstrates that small towns in deepest rural England were able to support a grocer. Demand for imported groceries arose in even the most sequestered communities. Stobart also challenges the predominance of London in the current scholarship on the colonial comestible trade, arguing that giving the capital such comparative status undermines and simplifies the complex web of trading networks which covered the country, reaching from a range of ports, travelling via a number of entrepôts, and penetrating the most isolated rural communities.[45] Using Stobart's work as a backdrop, I look here at the mid-century account books of two wealthy institutions, Chatsworth House in Derbyshire and Harvard College in Boston. Their exceptional level of detail means they are revelatory about buying sugar at a more local level.

[45] Stobart *Sugar and Spice, passim*

IV.i Case Study: Chatsworth & Harvard

Image III Unknown Artist, *Elihu Yale; William Cavendish, the second Duke of Devonshire; Lord James Cavendish; Mr. Tunstal; and an Enslaved Servant*, ca 1708. (Yale Center for British Art, New Haven CT).

The connections between Harvard and Chatsworth and the consumption of colonial goods go beyond their similarities as institutions. Image II speaks to the elite, imperial, enslaving networks which crossed across the Atlantic and spread to India in the late seventeenth century. Yale was born in Boston to an English family but returned to England in his childhood. He was a member of the East India company and became governor of Madras where he was involved in Indian slavery. In 1718, at the instigation of Cotton Mather whose father was president of Harvard and who had himself attended the college, Yale gave a bequest to Collegiate College in New Haven which was renamed Yale College in his honour. He is pictured here with the second Duke of Devonshire, owner of Chatsworth. The painting identifies its subjects as globally orientated and high-status individuals by including the trappings of elite colonial consumption: tobacco, imported wine and an enslaved child. While sugar is not explicitly pictured, it was key to the world which the painter evokes, one where great wealth was generated by overseas colonization and exploitation. Although this thesis focusses more on non-elite consumption, the creation of such wealth is part of its backdrop. The profits generated from slave-produced goods, bought by ordinary consumers, facilitated the life-style depicted here.

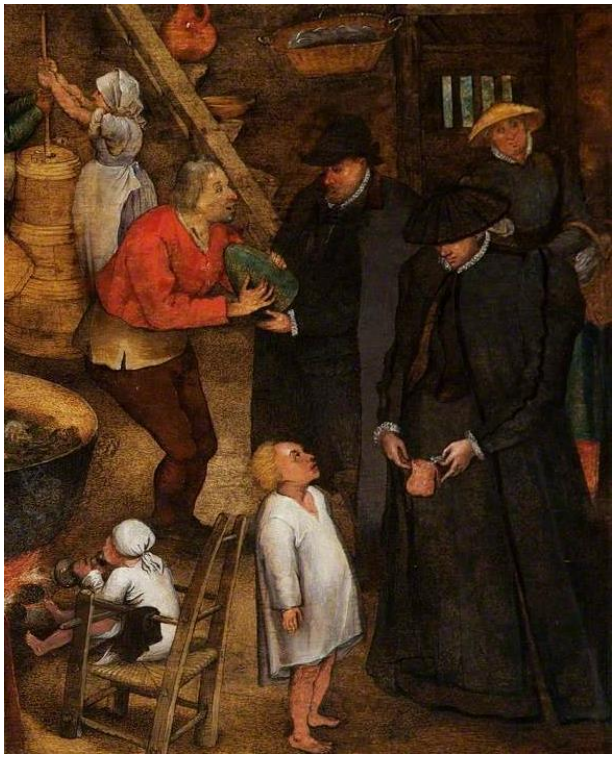


Image IV Detail from Jan Breughel the younger, *Visit to a Farmhouse,* c. 1620-1630 (Holbourne Museum, Bath)

This image by Breughel the younger depicts a wealthy Burgher giving a sugar loaf, wrapped in customary blue paper, to a poor country fellow. By contrast, the accounts of wealthy institutions I discuss in this section reveal the ways poorer consumers encountered sugar on their own terms, not just as a medium of charity from rich to poor. Certainly, sugar was used as a gift (see below p. 175), but it was not a rarefied luxury.

The family of the Earls of Devonshire, the Cavendishes, had two large residences in Derbyshire, Chatsworth and Hardwick Hall. Their household account books from the seventeenth century support Stobart's argument about the spread of grocers throughout rural England and, indeed, push it back even further in time. Though the Cavendishes were one of the richest families in the country, with an enormous household of upwards of 50 domestic servants, it is not their wealth which is the focus here. The households' spending habits on sugar reveal the ease with which you could buy sugar in a rural area in the mid-century. The family's archives hold a series of highly detailed accounts for the family's kitchen expenses dating from 1659-1665. In these six years, the family spent 111 weeks at the Derbyshire properties. Their expenses during this period allow us to have a sense of how much money could be spent on sugar in a rural environment.[46]

[46] Even though the family are only in residence for just under a sixth of the six-year period, it is important to note that the houses would not stay empty. The Devonshires employed a number of staff who stayed behind at the properties or lived in the local villages. We know some were paid board wages but their consumption patterns are not captured by the account books. As I am trying to capture how much sugar was available to the

In North America, the records of Harvard College provide a similar record of purchasing patterns. Harvard, though urban in comparison to Chatsworth, was also a well-established, wealthy institution which had to cater for a large number of people.[47] Like the Devonshire family, the college also kept detailed accounts. The first of these date from 1650-1663, and therefore the two are chronologically comparable. The key difference between the two, however, is that Harvard's members did not only use cash as a medium of exchange. Colonial North America was short of specie, thus outside of the port, exchange was enacted through a system similar to barter. Durable commodities – wheat, rye and corn as well as sugar and molasses - occupied a space in the commercial environment as items which had some of the characteristics of money. They were exchanged for goods and services. Robert Lewes described this phenomenon in *The Merchant's Map of Commerce,* explaining that 'there is little or no money used among them [the colonists] …their general way of dealing being to barter or exchange one commodity for another, both among themselves and with the merchants who bring or send in goods from hence, or from any other place'.[48] Our understanding of how sugar was consumed in colonial Boston is therefore negotiated through the prism of sugar's role as a medium of exchange. In this section, I look in more detail at both sets of accounts, starting with Chatsworth and Hardwick Hall, followed by Harvard.

widest range of people possible during the second half of the century, moving outside of London and the South East is an important geographical shift. There is one week where the household are in Derbyshire yet import their sugar from London. I have taken this week out of the data set. See C.29 Volumes, Chatsworth House Archives, Derbyshire. For more information on these account books see Mimi Goodall, 'Supplying the Kitchens of the Earls of Devonshire in the mid-Seventeenth Century', *Family and Community History*, 22 (2019), and Philip Riden, 'The Household at Hardwick in the Seventeenth Century' in David Adshead and David A.H.B. Taylor (eds.)*, Hardwick Hall: A Great Old Castle of Romance* (New Haven, Yale University Press, 2016) pp. 133-146.

[47] Harvard was founded in 1636 and by the 1650s it was a well-established educational institution, with a series of extensive rules and regulations. One of the ways in which the administration organized life on campus was to hire a 'steward' whose role it was to oversee the financial accounts of the college. The steward, Thomas Chesolme, was in charge of the payment of fees, but also for some of the college's outgoings, such as expenses in the kitchen. On average, there were sixty-seven fellows and students in residence each year over these ten years. The students stayed for four years, the fellows for longer. Modelling themselves on an Oxbridge college, Harvard's members were expected to live in the college all year round and they ate together in a communal dining hall. The students paid their fees to the college quarterly and also paid a defined sum for their food and drink (known as commons and sizings). The fellows were given a sum of money for their fellowship but were charged for their food. Each member of the college had an account with the steward and was charged quarterly. See Harvard Accounts: Ledgers for the Classes of 1650-1663, Harvard University Archives, Box 4, UAI 71.

[48] R. Lewes, *The Merchants Map of Commerce* (London, 1700) p. 50.

IV.ii Sugar in the Devonshire Account Books from Chatsworth and Hardwick Hall

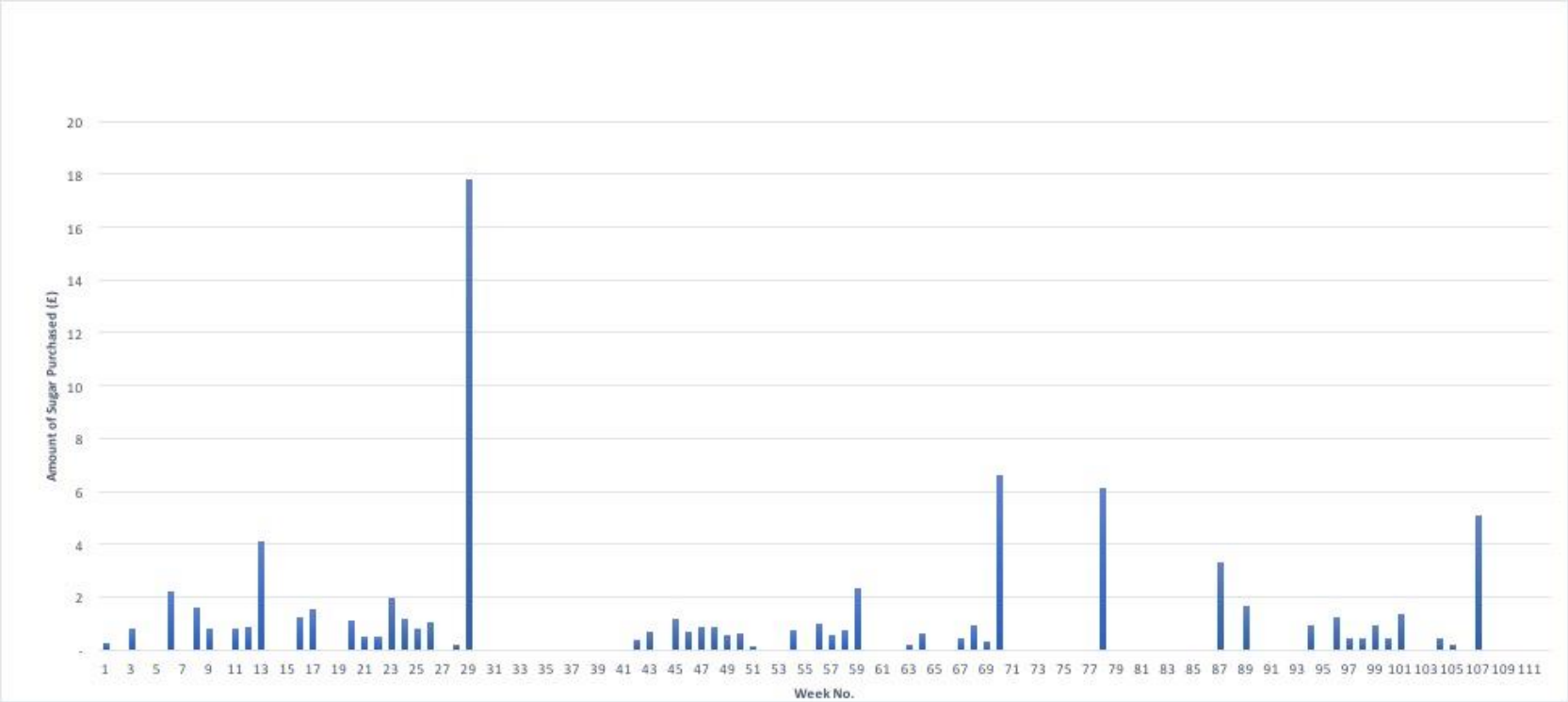
The most significant point we can draw from the household accounts is that the Devonshires and their household were consuming enormous volumes of sugar in the mid-seventeenth century. During the years 1659-1665, the Devonshires bought 1870 lbs of sugar (16.69 cwt or 848.2kg), costing them just over £82.[49] Their voluminous consumption speaks both to their wealth and to the large number of mouths that they needed to feed. It also importantly speaks to the amount of the good they were able to buy locally.[50] *Figure 1* gives us a sense of their shopping patterns in more detail, during the 111 weeks under consideration, sugar was bought in 53 of them, just under once every two weeks. The very large sums (such as that in the 29th week under consideration) are when the family first arrive at the house.[51] In following weeks, they make slightly smaller but more regular purchases. The accounts also show that sugar was able to be purchased with the utmost regularity. In the following subsections, I turn to the varieties and volumes of sugar purchased and describe the family's shopping patterns in more detail. When read altogether, the purchases of sugar at Chatsworth show that sugar was a 'ordinary' good in the local grocers' shops. A consumer could expect it to be on the shelves, in large and small amounts, at a range of price points.

[49] This is an enormous amount. If we turn to the home consumption figure for London during the 1660s, found in *The Book of Tables* and calculated above, we can contextualise it further. Once you have subtracted the exports, the yearly average of the amount of sugar remaining in London was 144.18 cwt. So, at a rough estimate, the Devonshires' rural consumption in Derbyshire in one year was 0.005% of the London imports and 0.004% of the putative national imports. This figure can be contextualised in other way, comparing the £82.1 spent on sugar to the yearly wage of a kitchen-maids which was six pounds.

[50] The C.29 account books demonstrate that there were, on average, 40 live-in servants during this period and the family could entertain hundreds of guests and their servants each week. The kitchens would also feed a number of itinerant guests and visiting tradespeople.

[51] The family either moved between Chatsworth and Hardwick or from their other residences into Derbyshire. When they arrived, they restocked the new house's larder explaining the larger purchases of sugar.

Figure 1 Total amount (£) of sugar bought each week at the Chatsworth and Hardwick Hall (1659-1665)



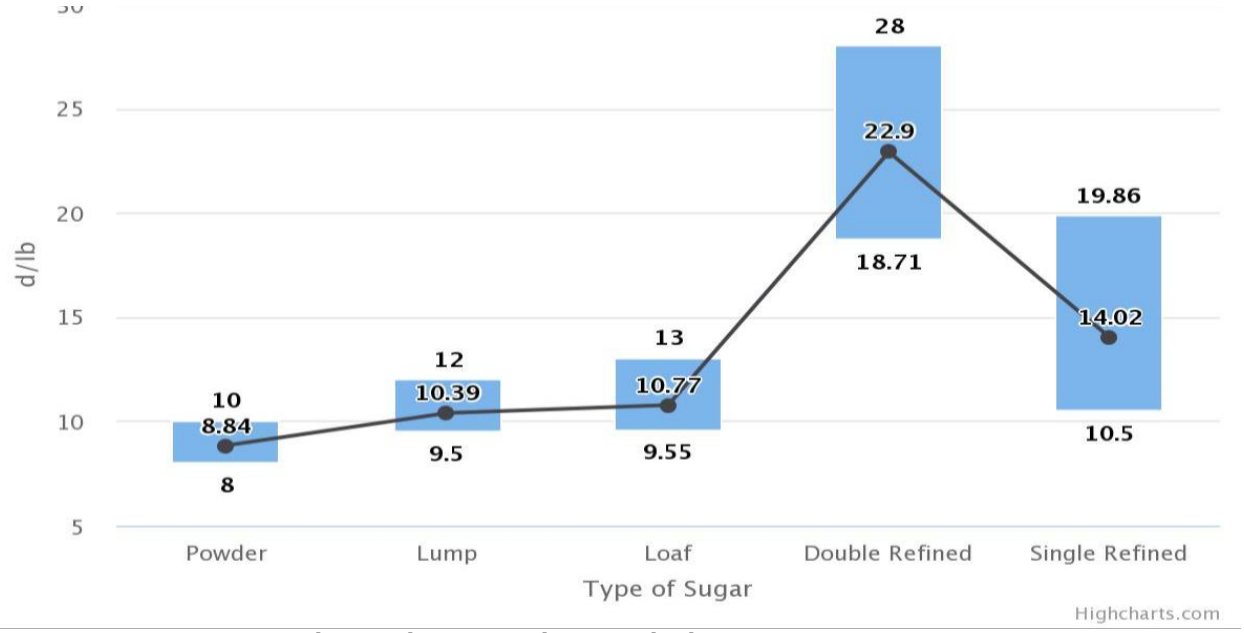
Source: C.29 Series, Chatsworth House Archives, Derbyshire.

Varieties of Sugar

There were many varieties of sugar available to an early modern consumer. These all arrived on shop shelves with different prices, different packaging and with different customers in mind. As prodigious consumers, the Devonshire kitchens bought many different types of the good: powder, lump, loaf, double refined, single refined and candy (though candy comprised a negligible amount of expenditure).[52] Powder sugar was bought in the greatest volume followed by lump. Loaf sugar and the refined sugars were bought in smaller quantities but slightly more was spent on them proportionally – as might be expected with the more expensive varieties. The account books record purchases week-by-week, therefore they give insight into price variety. While the price of sugar is often homogenised for the sake of economic arguments, its price ranged enormously over the course of one year. Sugar was not a stable good but was subject to seasonal variation, and varied in quality too.[53] *Figure 2* charts the range in price of the five main sugars bought by the family during this six year period along with their average price. There is most variety in the more expensive versions of the good, suggesting that their quality was under great scrunity. The Devonshires, however, were not buying the very cheapest form of sugar available – we saw in Chapter Two that molasses and certain types of brown sugar would have been cheaper. Although the retail price of sugar dropped over the remaining years of the century, as shown by Boulton and Sheridan (see Chapter One pp. 46-47), sugar at eight pence per pound would still have been a treat for the middling consumer at this early point. It is therefore also important to know in what volumes sugar was available to buy and how often the kitchens were able to purchase it.

[52] Powder sugar was probably semi-refined sugar that would have had a consistency and colour close to golden caster sugar today. Loaf sugar was white sugar pressed into conical loaves or bought as flakes that had been scraped off the loaf. Lump sugar came in the forms of little stones, a precursor to today's regulated cubes. Double refined and single refined were sugar that had undergone extra refining and therefore were more expensive. Candy had a hard, boiled consistency.
[53] Sheridan, *Sugar and Slavery*, p. 496 and Daniel Strum, *The Sugar Trade*, p. 212.

Figure 2 Average price of sugars bought in Derbyshire in 1659-1665 (mean and range)



Source: C.29 Series, Chatsworth House Archives, Derbyshire.

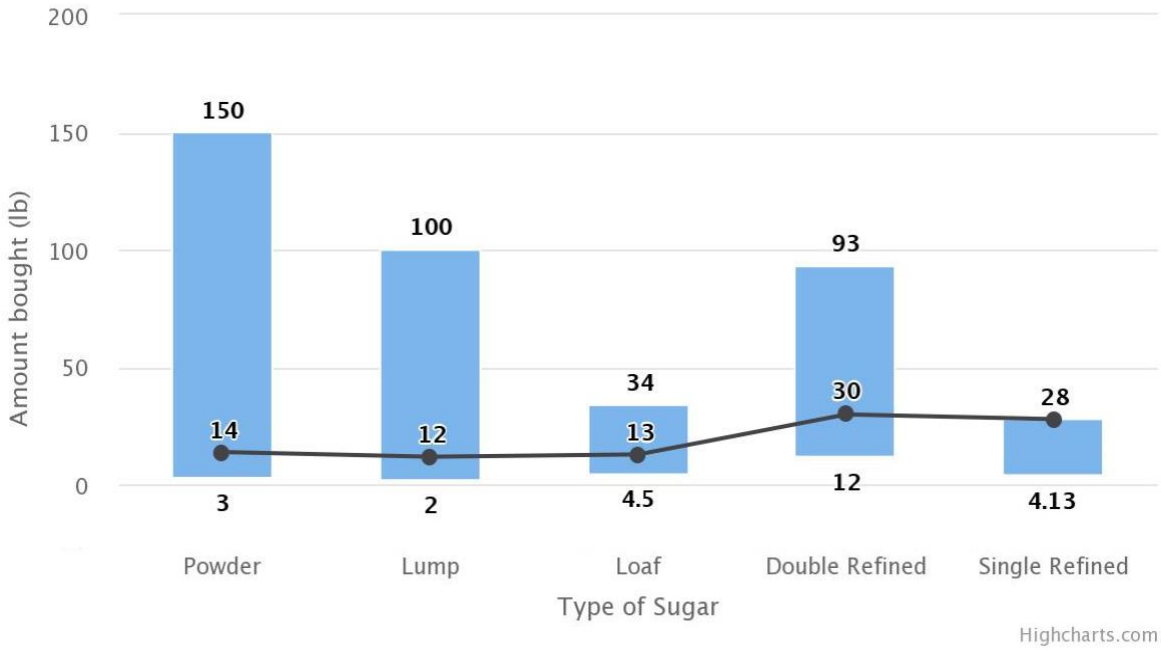
Volumes Purchased

Figure 3 charts the range of volumes of sugar the kitchens purchased during individual shopping excursions. It also records the median volume. We can see that both very small and very large amounts of sugar could be bought locally. This has important repercussions for our understanding of the penetration of sugar into the rural England and our understanding of who was able to buy it. The fall in the price of sugar is the most commonly cited explanation for its spread down through the socio-economic spectrum, and this does not really happen until well into the eighteenth century.[54] However, the graph visualizes two important points which amend this explanation somewhat. It shows that tiny amounts of sugar were available for purchase, meaning that poorer consumers would have been able to buy it occasionally. Furthermore, on the other end of the spectrum, the very large volumes of sugar available help to demonstrate that there was a thriving grocery market in rural Derbyshire. Grocers could expect large purchases of sugar and could cater accordingly for high levels of demand. Sugar was eminently available *and* did not have to be purchased in enormous volumes. Read

[54] Sheridan, *Sugar and Slavery*, p. 497.

together, these two points support the argument that poorer consumers could have been purchasing small amounts of the good, in cheaper varieties and an early time point.

Figure 3 Volumes of sugars bought in Derbyshire 1659-1665 (median and range)



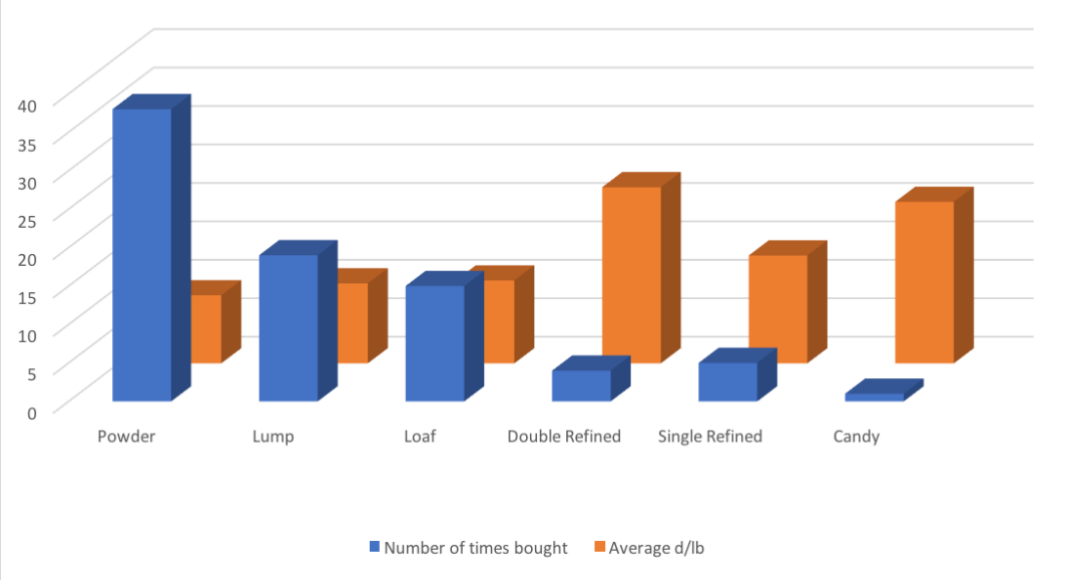
Source: C.29 Series, Chatsworth House Archives, Derbyshire.

Shopping Patterns

Price data on its own is not particularly helpful for understanding the relative position of a good in a shopping basket. Beyond the volumes available, we can also plot the average price against the frequency with which the sugar was purchased. These interpretations of the data give us greater insight into the role of sugar in the Devonshires shopping basket.

As *Figures 2* and *3* suggest, the kitchens spent the most in cost and bought the most in volume in powder sugar. This was the cheapest form of the good. They also bought it the most frequently. *Figure 4* shows that frequent purchase was correlated with a lower price. Even a kitchen as wealthy as the Devonshires' chose to buy more of the cheaper version. This cheaper sugar was not for ostentatious public consumption but was used as an ingredient in dishes which the whole household, elites and non-elites alike, would have eaten. Candy sugar and refined sugar were far more expensive and ostentatious, often appearing on the dining table as decoration.[55]

Figure 4 Price of sugar and frequency purchased 1659-1665



Source: C.29 Series, Chatsworth House Archives, Derbyshire.

[55] The C.29 volumes often note where the sugar was used, the more expensive varieties are listed as 'for the table'.

IV.iii Harvard and Sugar

Over the thirteen-year period recorded in the Harvard account books from 1650-1663, eighteen students and fellows paid their bills partially in sugar, some multiple times. Their bills were divided into two different types: cost for tuition and cost of living, known as 'commons and sizings'. Twenty-nine pounds four shillings worth of sugar were paid to the steward, weighing about 876 pounds or around 400 kilos. The price ranged from six pence a pound to ten pence a pound with a median price of eight pence a pound. It's important to bear in mind here that these are instances of sugar exchange which are explicit and unambiguous in the accounts. Sometimes there are instances of payments in 'sugar and wheat or sugar and spice' and it's impossible to determine the proportions. Other times, frustratingly, payment is just listed as 'in commodities'. This could have included sugar but clearly there is no way to be certain.

Table 5 Purchasing power of goods exchanged in the Harvard Steward's Account Book

	Wheat (bushels*)	**Rye (bushels)**	**Corn (bushels)**	**Beef (lbs)**	**Pork (lbs)**	**Sugar (lbs)**
Price (d)	60	48	36	3.5	4	8
Amount needed to defray tuition (bushels or lbs)	5.33 – 6.4	6.66 - 8	8.83 – 10.66	90-110	80-95	40-48
Amount needed to defray commons and sizings (bushels or lbs)	36	45	60	617	540	270

Source: Ledger for the Classes of 1650-1663, Harvard University Archives, Box 4, UAI 71 Ledgers
*A bushel of wheat, rye or corn was equal to 60 pounds (lbs).

These values, however, are relatively meaningless unless we consider sugar alongside other commodities in order to understand its purchasing power, and its status in comparison to other frequently used goods. Tuition fees for the four years ran from 26s 8d to 32s. The median figure for commons and sizings for the four years was £8 19s 11d. To meet the cost of tuition 40 to 48 lbs of sugar was required; to defray the cost of board 270 lbs of sugar was needed. In comparison, it would take 90-110 lbs of beef to cover tuition, and 640 lbs to cover commons and sizings. *Table 4* documents sugar's purchasing power alongside the other most frequently exchanged commodities. We can see from the figures that sugar is the most expensive good (you would need less of it to cover your costs) but, more important than the numbers themselves, is the fact that sugar is seen alongside these other basic staple goods as a recognized medium of exchange, even in this very early time period.

How did the sugar get to the Harvard kitchens? We know at this point that sugar came to America from a variety of islands. As mentioned above, it could be smuggled into the country. Sugar came from Dutch, Portuguese and French as well as from English plantations. It came into Boston by ship but by the time it arrived at Harvard, it had travelled via dry goods merchants who were dispersed across the Boston area. Harvard and its students sourced their sugar from Roxbury (seven miles away), Charlestown (three miles) and Boston (four and a half miles), from a number of different suppliers. The good would have either been carried by road or shipped up the Charles to Cambridge. Furthermore, these purchases did not happen in bulk, or at one point in time, but occurred across the year with relatively small amounts being exchanged – just as at Chatsworth. The smallest amount recorded in the Steward's accounts was one lb, the largest was fifty-six lbs. Stobart has demonstrated the importance of market access for the growth of the grocery trade in seventeenth and eighteenth-century England. In order for a good to proliferate widely, it had to be available.[56] While Harvard's members were part of the Massachusetts elite, the accounts also reveal the potential for sugar's spread through the economic spectrum. Like the Chatsworth accounts, the Harvard records demonstrate that poorer consumers would have had consistent access to small amounts of sugar.

[56] See Stobart, *Sugar and Spice* and 'Making the Global Local?'.

Payment from the students and the fellows was not the only source of Harvard's sugar. The steward and kitchens also bought the good independently. Interspersed among the double entries for the college members, the steward created a record of his own payments from 1656 to 1659. During this period, he spent 26 pounds on sugar, and purchased about 780 lbs or 350 kilos. Extrapolating from this, on average, the students' and fellows' payments formed about twenty-five percent of the sugar coming into the kitchen. We do not know exactly what they were eating day in day out but we can glean something of their diets from other sources. For example, a quarter bill account book from the college, dating from the 1680s, lists the ingredients purchased for the students' commencement feasts, which mention sugar and other sugar products, including rum, wine and beer – all of which, as we will see below, would have contained sugar.[57] Harvard's accounts show that sugar was a well-recognized, well-established good in colonial Boston. It did not have to be purchased from specific places and at specific times but could be found throughout the year across the city.

IV.iv Sugar on the move: Cook-shops, Coaching Inns and Ships Cabins

Chatsworth and Harvard's accounts are useful for understanding the availability of sugar in one specific area and how customers might have bought it from a grocer. However, sugar travelled much more widely. Correspondingly, travellers consumed it when they too were on the move. In this section, I turn to the ways in which a consumer might have been able to buy sugar in a variety of different forms and in locations beyond the grocer's shelf. My aim is to show how sugar proliferated through the Atlantic consuming environment and helped to support a wide range of metropolitan commercial enterprises.

Catering to the new taste for the drink, coffee shops sprung up on both sides of the Atlantic during the seventeenth century. And while it is debatable as to whether coffee itself was sweetened, coffee shops were places where sweet treats abounded. Phil Withington has argued that, as a result of the erratic and restricted trade in coffee beans, coffee shops actually served less of the hot beverage than their moniker suggests. In fact, he argues that they survived because they diversified their offerings.[58] Entering into a coffee shop, you could find a variety of foods and beverages on sale, including many sugared goods as discussed

[57] Quarter bill book for the Classes of 1689-1723, Harvard University Archives, Box 10, UAI 71.
[58] Phil Withington, 'Public and Private Pleasures', *History Today* [https://www.historytoday.com/history-matters/public-and-private-pleasures Accessed: May 2020].

above. In London, a sweetened refreshing lemonade known as sherbet was often found on sale alongside coffee.[59] Moreover, coffee shops were also purveyors of medicinal goods. A discourse on 'Doctors Pills' published in 1680 listed the locations where lozenges and pills made out of sugar were sold. names six specific coffee houses as well as boldly stating that the pills can be found 'at most other Eminent Coffee-houses and Noted Cities and Towns in the Kings Dominions and Plantations.'[60]

Contrary to this statement, I have not found records of lozenges being sold in British America, though coffee shops on the Western edges of the Atlantic certainly catered for diverse tastes. The records of the City of Boston document the provision of annual licenses to citizens to serve coffee and they also often include permission to sell chocolate, cider and strong beer, suggesting that coffee-houses were establishments with a broad menu. [61] The same was true for coffee shops down the American coast. In New York, the record of the first coffee-house is from 1697. John Hutchins' coffee house was located at the Sign of the King's Arms on Broadway and was configured in a way which allowed patrons some privacy - a row of small booths were screened with green curtains, and inside them one could sip madeira wine, ale, or coffee in peace.[62] In Philadelphia, on the banks of the Delaware river, Henry Flower opened a coffee house in 1703 and it became a locus of commercial activity in the city.[63] Indeed, across British America, coffee shops served as auction houses and other places of exchange. In Boston, they played an important role in the book-trade. Itinerant booksellers would buy their stock at an auction held in a coffee-shop.[64] Printed recipe books were part of the transatlantic book trade, thus just as coffee shops sold sugared goods, they also sold the books which conveyed instructions on how to prepare such sugary treats.[65]

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[59] Like coffee, sherbet came to England from the middle east, where the two beverages were also frequently sold together.

[60] Nathanial Lomax, *Delaun Reviv'd, Vix. A Plain and Short Discourse of that Famous Doctor's Pills, their use and Virtues VVith Choice Receipts for the Cure of the Scurvy, Dropsy, Jaundies, Venereal and Other Diseases. before I Speak to this Famous Medicine, I Will Declare Who Delaun was; then, the Price of His Pill and how to Take it, and of its several Virtues in Order, in such Plain Words, as to the Weakest Capacity may Understand: And I Intreat those Who Hope for Help Hereby, would Throughly Read this Short Book, and Observe My Directions for their Own Good and the Authors's Credit* (London, s.n, 1680) p. 12.

[61] Nineteen licenses for coffee shops were granted between 1660 and 1701. See*: A Report of the Record Commissioners of the City of Boston containing the Boston records from 1660 to 1701* (Boston, Rockwell and Churchill, 1881) pp. 58, 60, 64, 68, 73, 76, 87, 104, 110, 118, 128, 139, 156, 204 & 207.

[62] Carl Bridenbaugh*, Cities in the Wilderness: The First Century of Urban Life in America, 1625-1742* (New York, Ronald Press Company, 1938) p. 267.

[63] Bridenbaugh*, Cities in the Wilderness*, p. 269.

[64] Bridenbaugh*, Cities in the Wilderness*, p. 291.

[65] Records of book shipments into the colonies demonstrate that there was also demand for English recipe books across the ocean. For example, in 1682, the bookseller John Boulter shipped Hannah Wooley's *Queen-Like*

Image V Detail from *The Cries of London,* Reproduced in Shesgreen 'The Cries of London in the Seventeenth Century', p.285.

Coffee shops were not the only place in town where one could procure sugared goods. Cake shops, confectioners and pastry vendors proliferated. The confectionery trade blossomed in the seventeenth century. Nuala Zahedieh calculates at least forty such shops existed in London by the end of the seventeenth century, though sugared goods extended far beyond these specialist shops and sugar was cooked, baked and boiled into other foods for sale.[66] Describing Philadelphia in 1697, Gabriel Thomas wrote that 'Tarts, Pies, Cakes, etc.' are available 'on any Day in the Week' and that the city also boasted 'several Cook-shops'.[67] Similarly, Boston granted licenses to citizens to keep cook shops such as that owned by the presciently named John Lewis. In 1663, Lewis was given permission to 'kepp a Cook shop for the refreshing of Travilers Strangers & others'.[68] These establishments also often sold wine and beer along with comestibles.[69] Samuel Pepys makes frequent reference to buying cakes in London and further afield such as Wilkinson's, found in Westminster, where he buys scotch cakes, and the Red Lyon in Barnet where he ate some of 'the best cheese-cakes I have eaten in my life' in 1667.[70] Pepys also famously collected images of London street-sellers, and was possibly the first person to amass a collection of these ephemeral printed broadsides. Among them, for example, is an image of a woman carrying 'hot pudding-pies' (*Image IV*) atop her head which she promises will 'sweeten' the purchasers' 'dainty mouths'.[71] While Pepys was a wealthy Londoner, the image shows us that cheaper fast food would have been available for purchase on the street and, just like fast food today, it would have been sugared.

Closet to Boston, and in 1683, John Chiswell shipped the *Works* of Gervase Markham. (See: Worthington Chauncey Ford, *The Boston Book Market, 1679-1700* (Boston, The Club of Odd Volumes, 1917) pp. 94 & 109.)

[66] Zahedieh, *Capital and the Colonies*, p. 221.

[67] Thomas Gabriel, *An historical and geographical account of the province and country of Pensilvania, and of the West-New-Jersey in America* (London, 1698) p. 26.

[68] *A report of the record commissioners of the city of Boston* p. 18.

[69] A different sort of license was required to serve alcohol on the premises. Acquiring such a license seemed to be desirable. In 1668, William Kent was not permitted to sell beer or liquor in his cook shop but by 1670, he has challenged this ruling and achieved permission to sell both food and drink and continues to do so for at least another decade. (See *A Report of the Record Commissioners of the City of Boston* pp. 41, 54, 139.)

[70] Robert Latham and William Matthews (eds.), *The Diary of Samuel Pepys, Vol. 8: 1667* (London, Harper Collins, 1971) pp. 557, 381.

[71] Sean Shesgreen, 'The Cries of London in the Seventeenth Century, *The Papers of the Bibliographical Society of America*, 86 (1992) p. 286.

Portable dishes were common. Food was not consumed in one place. Street-sellers would also sell food at the doors of houses, even in rural locations. The accounts of the Hastings family in Leicestershire in the early 1660s record expenses for 'tarts bought at the door', and payments to those 'who brought a cake'.[72] A couple of early eighteenth-century bills from the same family, which record expenses incurred when they were travelling across England, note purchases of sugar across the country. 'A bill for travelling to Yorkshire and back again' records meals purchased on the road, including 'an apple pie' as well as 'Lemon shugar and butter' for 8d and 'Tea sugar cream toast and butter' for 1s 1d. It is not clear from this bill how many it would feed, but other bills record 'breakfasts for the servants'. It is therefore conceivable the whole party travelling, family and servants alike, would have been fed.[73]

It was possible to buy sugar on the road in America too. An account drawn up by a Daniel Honan in 1702 records a trip made by Edward Hyde, Governor of New York to Albany in order to 'renew the ancient covenant claim with the Indians of the five Nations'. The account tracks the expenses the retinue incurred while travelling, showing that the men and accompanying soldiers consumed vast amounts of sugar. Over the three-and-a-half-month trip from June to October, the group purchased at least 140 lbs or 63.5 kilos of sugar.[74] Furthermore, although not possible to purchase *en route*, sugar formed part of provisions for sailors on board ships. A Boston ship captain, Samuel Moorcock purchased 61.5 lbs of sugar in 1711 to provision his ship the Greyhound which was journeying from Boston to the Bahamas via South Carolina.[75] All of these instances suggest sugar was considered quotidian and necessary to everyday living. Even when people were travelling, and might thus expect to compromise on certain aspects of their diet, sugar remained a necessity.

Section V Food, drink and medicine

Throughout the previous section, a whole range of sweet foods and beverages have been referenced in passing. To finish this chapter, I weave together such references in more detail

[72] Folder 19, Box 18, Hastings Papers, Huntington Library, California.
[73] Folder 16, Box 34, Hastings Papers, Huntington Library, California.
[74] Daniel Honan, *An account of the Charges of his excellency the Lord Viscount Cornbury's Journey to Albany to renew the ancient covenant claim with the Indians of the five nations and river Indians and to his return to New York,* BL 200, Blathwayt Papers, Huntington Library, California.
[75] Waste Books of Nicholas Moorcock: Vol II, Boylston Papers, Massachusetts Historical Society, Boston Massachusetts.

to give a more sustained account of how sugar entered the mouths of consumers across the British Atlantic. There are three broad categories in which sugar was consumed: medicines, foods and beverages. This distinction provides a somewhat false trichotomy as there had yet to be a fixed epistemological separation of 'food and drink' and 'medicine'. A Galenic understanding of the body prevailed during this period: anything that entered the body was thought to alter it for the better or the worse.[76] This understanding is reflected in the recipe books which are the primary source material for this section and which crossed the ocean with consumers. Let's turn again to the recipe book we began with, Ann Clark's notebook which travelled with her as she emigrated. There is a recipe for a poultice to cover the bite of a 'mad dog or any venomous beast' which calls for 'fine sugar'. On turning the page, the reader is greeted with a recipe for 'march pane' (a mixture of almonds, sugar and similar to today's marzipan) and a tansy (an eggy creamy pudding with a texture similar to clafoutis). Just as the book itself positions medicine and food in the same epistemic space, without creating clear boundaries or partitions between the two, sugar also can be found in recipes across both of these categories.

There are other recipe books which made a similar journey to Ann Clarke's. In England, on December 26th, 1650, an Anna Cromwell inscribed a recipe book with her name. By the eighteenth century, the book had travelled to Massachusetts. A pencilled note inside the volume describes its journey. The note reads: 'This book was given to Sarah Sartell when she moved to Grafton amongst the Indians. Sarah married Rev Solomon Mr. Prentice he was the first minister 1731 in Grafton. The mother of Sarah had this book written by Mr. Sartell so that she could do her own Cooking and Doctoring as there was no Dr in the country'.[77] Like Ann Clarke's book, Anna Cromwell's is written in a number of different hands and is a repository of common, contemporary, knowledge. It also combined recipes for food, drink and medicine together. In the remaining sections I look at all three of these categories in turn, starting with medicine.

[76] Elaine Leong has written extensively about the juxtaposition of food and medicine in early modern recipe books and explains that their close proximity speaks to the 'multifaceted role of early modern housewives' who seamlessly engaged with a wide range of activities. Their contiguity also reminds us of the Galenic theories of the body which proliferated in the period and which articulated a humoral understanding of the human body. Healthy bodies needed a balance of the humours and everything which entered (and, indeed, exited) the body affected this relationship, thus food and medicine were understood to be much the same thing. Elaine Leong, *Recipes and Everyday Knowledge* (Chicago, University of Chicago Press, 2018) p. 70.
[77] Charles Brigham Account Book, 1650-1730, MSS Folio Vols. B. American Antiquarian Society, Worcester Massachusetts.

V.i Sugar as Medicine

Before it became the universal sweetener, sugar played a more complex role in the diets of early moderns. Rather than being confined to desserts, it was much more multi-faceted and found its way into a wider variety of foodstuffs. The period covered in this thesis sees understandings and uses of sugar change over time. In the sixteenth and early to mid-seventeenth centuries, it occupied a position somewhere between a spice and a sweetener, and it was also believed to have important medicinal qualities. Such medicinal properties were wide-ranging and hard to pin down, but Woodruff D. Smith suggests that in books touching on health in the sixteenth and early seventeenth centuries, 'sugar was usually treated as a drug that could alter the balance of the humours of the body by generating choler or improving the efficiency of other drugs'.[78] Thomas Tryon, the sugar merchant, economic thinker, sometime health writer, and evangelical vegetarian who wrote prodigiously throughout the seventeenth century, included sugar in a list of natural foodstuffs which 'doth with the highest diligence withstand all the encroaching Powers or Humors'. As a simple and natural food, sugar had the power to calm the blood and a person's disposition:

'The more simple and equal your Meats and Drinks are, the more equal are your Humors; also the calmer and purer is your Blood, which is the Source whence the Spirits are Generated, and from the Spirits, as we said before, arises Dispositions, Imaginations, Inclinations, Words and Works'.[79]

Nicholas Culpepper, whose books were popular on both sides of the Atlantic, meanwhile described the qualities of sugar as 'hot in the third degree, strengthens the lungs, takes away the Roughness of the Throat, Succours the Reins and the Bladder'.[80]

Sugar's ubiquity within medical recipes, however, suggests that it was also considered to be an important vehicle for more potent drugs, as well as having specific healing properties in and of itself. All types of sugar made their way into medicines, and in a number of different ways. Most frequently, sugar would be boiled up to form the syrup which provided a vehicle

[78] Smith, 'Complications of the Commonplace', p. 267.
[79] Thomas Tryon, *Letters upon Several Occasions* (London, 1700), Letter 19.
[80] Nicholas Culpepper, *Pharmacopoeia Londinensis, or, The London dispensatory: further adorned by the studies and collections of the fellows, now living in the said colledg: being that book by which all apothecaries are bound to make up all the medicines in their shops* (London, 1665) p. 33.

for herbs. In 1664, Samuel Pepys recorded in his diary that his physician Dr Burnett had prescribed a combination of roots and herbs and sugar boiled to 'ye consistence of a Syrrup' for a supposed ulcer in his bladder or kidneys. He was instructed to take a spoonful with every draught of beer or ale he drank.[81] Dr Burnett clearly believed the same as Nicholas Culpepper - sugar would help Pepys' renal infection. In the same decade, the household accounts of the Hastings family at Donington Park in Leicestershire record purchases of sugar for 'snale water' and a 'wound drink' which were to provide succour to various ill servants.[82] While in November 1675, at Chatsworth, 'kitchen sugar' was dedicated 'for sick servants'.[83]

The apothecary industry relied on the same ingredients on both sides of the Atlantic, and both countries participated in the global drug trade which was well established by the end of the seventeenth century.[84] John Barton, based in Salem Massachusetts, also prescribed sugared remedies. His account book, dating from 1662 to 1676, though scrappy and hard to decipher, clearly prescribes syrups to his sick customers.[85] Furthermore, just as recipe books, printed and manuscript, crossed the ocean, so did medical treatises and pharmacopoeias. Two important and popular texts which made the journey were Nicholas Culpepper's *Pharmacopoeia Londinensis* and William Salmon's *Pharmacopoeia Londinensis, or the new london Dispensatory*.[86] An abridged version of Culpepper's text became the first medical text printed in America and was popular.[87] Salmon had travelled to both New England and the West Indies and would have been aware of the drugs available to the population when writing his book. Both Culpepper and Salmon sprinkle sugar liberally through their lengthy manuals with whole sections devoted to syrups, pills and distillations – all of which demanded this ingredient.

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[81] Robert Latham and William Matthews (eds.), *The Diary of Samuel Pepys, Vol. 5: 1664* (London, Harper Collins, 1971) p. 194.
[82] Folders 17 & 21, Box 18, Hastings Papers, Huntington Library, California.
[83] C.29R, Chatsworth Archives, Derbyshire.
[84] There has been some suggestion that medical knowledge in the colonies lagged behind that of the newest practices in England. But this knowledge would have also been slow to proliferate into provincial practices in the mother country as well. Furthermore, given sugar's prevalence within the texts and account books and its primary use as a vehicle for other drugs, this delay is not particularly significant. See I. K. Steele, 'A London Trader and the Atlantic Empire: Joseph Cruttenden, Apothecary 1710-1717', *William and Mary Quarterly*, 34 (1977) p. 286.
[85] John Barton Account Book, 1662-1676, MSS Octavo Vols. B, American Antiquarian Society, Worcester, MA.
[86] Both can be found in the inventory of bookseller Michael Perry (See Steele, 'A London Trader', p. 297)
[87] David Cowen does not give the circulation figures but notes they are not rare. David L. Cowen 'The Boston Editions of Nicholas Culpepper', *Journal of the History of Medicine*, 6 (1956) p. 158.

Apothecaries from England also emigrated to the colonies and set-up shop in the New World. *Image VI* is an engraving of a London shop. Norman Gevitz makes the argument that such an interior would have been familiar to New England customers as well. There are records of two apothecaries, Giles Firmin Sr. and Robert Cooke, who formed part of the first wave of migrants who travelled to New England between 1629 and 1640.[88] However, William Davis became the principal apothecary in New England. From 1643, when he arrived from England, Davis enjoyed a 33-year long career supplying drugs and medicaments to the New England community.[89] Public record only documents two competitors in the area during the mid to late 1600s, William Woodcock and Henry Taylor. Woodcock undoubtedly used sugar as he was licensed to distil alcohol and sell it for retail.[90] The debts recorded on his death demonstrate that he bought sugar numerous times from six different tradespeople in the town and his probate inventory records an alembic still like the one found in *Image V.*[91] The apothecary trade became larger towards the end of the century, and many more druggists joined the three to supply New Englanders with sugary syrups, potions, unguents and other cure-alls.[92]

[88] N. Gevitz, '"Pray Let the Medicines Be Good": The New England Apothecary in the Seventeenth and Early Eighteenth centuries', *Pharmacy in History*, 41 (1999) p. 89.
[89] Gevitz, '*Pray let the medicines be good*', p. 90.
[90] Gevitz, '*Pray let the medicines be good*', p. 92.
[91] George Francis Dow (ed.) *Records and Files of the Quarterly Courts of Essex County Volume IV* (Boston, Essex Institute, 1914) p. 203-204.
[92] Gevitz, '*Pray let the medicines be good*', p. 94.

Image VI William Faithorne, *The Apothecary's Shop Opened,* 17th Century (Reproduced in Gevitz, 'Pray Let the Medicines be Good', p. 91.)

In the bottom, right hand corner of the image is an alembic still. The original liquid, possibly an alcoholic solution made from fermented sugar and herbs, would be placed in a round bowl on top of the brick stove and slowly heated. The liquid inside would boil and as a gas would pass through the tube to condense in the barrel. This served to concentrate the medicine as the water, with a higher boiling point, would remain in the first vessel. Gevitz writes that it is likely that the shops looked the same on both sides of the Atlantic.

Medicinal sugar did not just come in liquid form. As indicated above, pills made of sugar were also common. The Hastings family accounts also record purchases for hard sugar treatments from apothecaries in the local Leicestershire area. In 1644, their bill with the apothecary Mr Cowper makes note of a 'lofe of sugar' worth 6s. Another, dating from 1640-1644, records several payments for comfits (scented seeds, like caraway, coated in sugar to form a kind of boiled sweet) and syrups.[93] In 1660 a Mr Buckworth, a sugar refiner in Covent Garden, took out an advertisement in the newspaper *The Parliamentary Intelligencer* to promote his 'famous Lozanges' which he promised could cure 'Consumption, Coughs…Colds in general, and all other diseases incident to the Lungs and an Antidote to the

[93] Folder 34, Box 14 and Folder 32, Box 15, Hastings Papers, Huntington Library California.

Plague'.[94] These lozenges were not expensive. A humorous advice book by Henry Peachum, first published in 1667, entitled *The Worth of a Penny, or, A Caution to keep Money. Observing that want of money caused melancholy and misery* supplied a list of things that cost only a penny, noting lozenges from the apothecary among the other goods. John Barton, the New England apothecary, also prescribed 'pills' made from boiled sugar to his American customers.[95]

In West Indian islands, sugar was also used as medicament. In his travelogue detailing a trip to Jamaica in 1688, Hans Sloane described multiple remedies he used while acting as a physician there which included sugar; including remedies for cholera, diseases of the kidneys, and eye problems.[96] As in England and North America, sugar was used alongside herbs either as a syrup or as a preserver. Sloane's text demonstrates the potential for a more detailed study of consumption of sugar in the Caribbean which highlights one key way in which this thesis could be extended into a more comprehensive study of the British Atlantic world.

The most common remedy for poorer sorts in England and British America, however, was treacle or molasses - the sticky residue from sugar refining we saw in the previous chapter. Before sugar became more prolific, a type of medicine known as Venice Treacle was used frequently and was considered to be a panacea until the mid-eighteenth century when its efficacy was called into question.[97] Venice treacle was made of mithridatum or theriac which were a combination of herbs and minerals crushed and suspended in honey. Records of its usage date from the second century B.C. and it circulated widely seventeenth-century London. While it was commonly called Venice Treacle, it could also be given another moniker, depending on where it was made, leading to instances of 'London treacle' being prescribed.[98]

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[94] 'News.' *Parliamentary Intelligencer*, Primary Source Media, October 1, 1660 - October 8, 1660. *Seventeenth and Eighteenth-Century Burney Newspapers Collection* (Accessed June 2020: https://ezproxy-prd.bodleian.ox.ac.uk:2608/apps/doc/Z2001055705/BBCN?u=oxford&sid=BBCN&xid=65947a8f.)

[95] John Barton Account Book, 1662-1676, MSS Octavo Vols. B, American Antiquarian Society, Worcester MA.

[96] Hans Sloane, *A Voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica* (London, 1707) pp. 11, 42, 46 & 104.

[97] J. P. Griffin, 'Venetian Treacle and the Foundation of Medicines Regulation', *British Journal of Clinical Pharmacology*, 58 (2004) p. 314.

[98] Griffin explains that it was not until later in the seventeenth century that multiple London apothecaries were licensed to make treacle. During Elizabeth's reign, only one apothecary William Besse was allowed to make the drug otherwise it was imported. Griffin, 'Venetian Treacle', p. 320.

However, this drug was relatively expensive as it was made from a number of imported and rare ingredients and thus it was confined to the wealthy who could afford the remedy. The advice from the College of Physicians during the plague of the 1660s was published in 1665. It provides examples of the best medicines for the diseases. In a section entitled 'For the Richer Sort', London treacle is listed as 'good both to preserve from the sicknesse, as also to cure the sicke, being taken upon the first apprehension in a greater quantitie'.[99] With the increase of sugar refining and the greater production of cheap molasses, poorer people looked to the sticky by-product as an equivalent to the expensive Venice Treacle and indeed began to call it by the same name. In a 1674 supplement to Nicholas Culpepper's *English Physician and Complete Herbal*, Joseph Balgrave described this phenomenon:

> 'But that which is now commonly used by the vulgar people, and generally by them called Treacle, which is of a sweet and pleasant tast, is not any kind of Treacle, but is called properly Molosses; and is nothing else but the grosse dross of Sugar, taken in the refining or boyling thereof, and is not helpful in any disease, yet usually and greedily desired and taken by the common People as an universal medicine'.[100]

Though as mentioned the effectiveness of Venice Treacle as a medicine was not fully interrogated until the following century, the attempts to regulate its production make it clear that it was understood to not always be successful. Sugar's effectiveness, however, was questioned much earlier, as Balgrave's comment suggests. The writings of Thomas Tryon, the merchant and health-writer quoted earlier (pp. 114, 138), articulate the changing opinion of the good. Tryon is an inscrutable character, whose whimsical views lack consistency and coherence, but his writings evidence some of the shifting attitudes to sugar during the latter half of the seventeenth century. Sometimes he argued for its importance, both medicinally and for trade, at other times he detailed the negative effects it can have on the body. In *The Way to Health,* one of his more popular works, he described how sugar has the potential to make 'the *blood* also of a hot, sharp keen Quality and causes thick hot fumes to ascend into the head, hands and feet and all the external parts to glow with an unnatural heat; it deadens

[99] London College of Physicians, *Certain necessary directions, aswell for the cure of the plague as for preuenting the infection; with many easie medicines of small charge, very profitable to His Maiesties subiects* (London, 1665).
[100] Joseph Balgrave, *Balgrave's supplement or enlargement to Mr. Niche. Culpepper's English physician* (London, 1674). It is hard to discern whether this practice crossed the Atlantic. John Barton, the Massachusetts apothecary prescribed 'treacle' liberally, often with an emetic. However, given the fact that they were referred to by the same name, we cannot know whether this treacle was mithridatum or molasses.

and dulls the action of the stomach and takes away the sharpness of the appetite'.[101] Tryon was critical of using sugar as a remedy, giving the example of a posset drink for sick people with such an unpleasant taste that the 'wife-nurse adds a lusty quantity of sugar to hide its gross dull fulsome taste which renders it still duller and heavier on the weak stomach of the sick'.[102] Presciently for the seventeenth century, Tryon also noted the addictive qualities of both sugar and some spices explaining that: 'the worst of all is our stomach are accustomed to such things, we cannot be well satisfied without them, for they are to some degree like Wine whereof if a man drink frequently, he cannot without a great deal of trouble, and some hazard as to his Health, refrain from it'.[103]

Tryon's writings are indicative of a pervasive shift in attitudes towards sugar, or more specifically, attitudes towards its excessive consumption, in the later seventeenth century. Popular medical writings from the time made empirical observations that diets with large amounts of sugar appeared to be correlated with tooth decay, corpulence, gout, and other health disorders. Woodruff D. Smith argues that the effects of these shifting attitudes are exemplified by the greater moderation with which sugaring is recommended in treatises on health and cooking after about 1700.[104] By 1717, sugar's association with quackery had been solidified. A poem describing the fire at the London Customs House in 1715 vividly describes the way in which the stores of sugar melted and ran in rivulets down to the river where they were collected by quacks who sold them 'as new-discover'd Physick, to cure *Consumption*'. Ending the description with a witty aphorism, the poet explains why 'our Quack-Administrators of Physick, use such trifling Matters'. The reason, he asserts, 'Is 'cause they're cheap to him that gives 'em, / and dear to th'Patient that receives'em'.[105] Sugar, no longer a luxury, was being procured cheaply by deceptive swindlers and passed off as pricey medicine.

Woodruff D. Smith argues convincingly that it was the changing perception of sugar amongst the medical establishment that lead to the rise of its consumption in tea. Small amounts of sugar were still deemed permissible and the bitterness of the tea-leaves would offset the

[101] Thomas Tryon, *The Way to Health* (London, 1683) p. 219.
[102] Tryon, *The Way to Health,* p. 223.
[103] Tryon, *The Way to Health*, p. 219.
[104] Smith, 'Complications of the Commonplace', p. 268.
[105] Anon., *British Wonders: Or, a Poetical Description of the Several Prodigies and Most Remarkable Accidents that Have Happen'd in Britain Since the Death of Queen Anne* (London, 1717) p. 10.

deleterious effects of sugar. The taste of tea and sugar, a herb-like substance combined with sweetness, was a new manifestation of older recipes for cordials and syrups. Like sugar, tea became ubiquitous, divorced from any healing properties and it too rose to prominence as a remedy. However, the erratic and haphazard nature of the tea trade until the 1710s meant that tea did not emerge as a quotidian consumer item until eighteenth century. During the seventeenth century, the drink was still considered to be chiefly medicinal.[106] Nonetheless, the eventual pervasiveness of tea sweetened with sugar originated from this early practice.

V.ii Sugar in Food

The most obvious and extensive use for sugar however, was as an ingredient in food. It was sprinkled and stirred into dishes, and in some cases, it would positively saturate them. It is here, as an ingredient in processed foods, however, that the use of sugar becomes harder to find in the archives. Account books mostly record purchases for ingredients, not the final cooked foods. Nevertheless, there are some brief notes which provide clues, which, when read alongside recipe books, can point to where sugar eventually ended up and whose mouths and stomachs it filled.

The household accounts of the Devonshire family at Chatsworth and Hardwick Hall provide small annotations next to their purchases of sugar, indicating its eventual use. Sometimes it is labelled 'for the table', suggesting it sat on the dining table to be sprinkled over dishes. This table sugar was generally more expensive and was perhaps therefore an important signifier of the family's wealth to their guests. However, the cheaper sugar ends up in 'biskits', 'pies', 'puddings' and 'cakes'.[107] Recipe books tell us how much sugar these baked goods would have called for and the quantities are not sparing. For example, Hannah Wooley's 1670 recipe for thirty-six Shrewsbury Cakes is as follows: 4 lbs (1814g) of flour, 2 lbs (907g) of butter, 1.5 lbs (680g) of fine sugar and 3 eggs plus a dash of rose water and a few teaspoons cinnamon for flavouring.[108] Such recipe books do not recommend economy when using sugar. Large amounts are used regularly without comment. Even in a recipe book published upon the restoration of Charles II, which pretended to document the diet of Elizabeth

[106] Smith, 'Complications of the Commonplace', p. 272.
[107] C.29 Volumes, Chatsworth Archives, Derbyshire
[108] Today, recipes for small cakes call for equal amounts of each ingredient. The most dramatic change would be that a modern-day recipe would use more butter and eggs and less flour. The amount of sugar sees a slighter increase. Our cakes are fattier, rather than necessarily sweeter. Hannah Woolley, *The Queen-Like Closet* (London, 1670) p. 55.

Cromwell, wife of the deposed Oliver, and which made much of her 'sordid frugality and thrifty baseness', used sugar in many dishes including the 'marrow puddings which she usually had to her Breakfast'. [109]

Beyond cakes and puddings, sugar was an important ingredient in fruit preservation. Over the course of the seventeenth century, England underwent what has been termed 'a fruit revolution'.[110] Joan Thirsk explains that new ways of growing fruit and an increase of imported fruits meant that the quality and quantity of fruit in the country improved during the 1600s. More fruit was being grown and eaten, and importantly, more fruit was being preserved. Preserving and bottling fruit required a lot of sugar. Recipe books are replete with instructions for preserving and candying apricots, raspberries, barberries, almonds, walnuts, apples, pears, quinces… the list goes on. While these recipes vary somewhat, the basic premise is the same: cook the fruits using the same weight of sugar, so that the eventual mixture was half fruit, half sugar. Preserving turned a cheap low-calorie and perishable foodstuff into one that was much more expensive but kept for far longer and provided far more calories. The activity of preserving, however, is possibly the most difficult thing to track in archival sources. Fruits were grown in kitchen gardens or foraged from hedges and trees growing nearby. Consequently, they do not turn up in account books very often. Furthermore, given preserves' durability, consumers could be eating them for many years without recording any purchases for more sugar. Nevertheless, we know that preserving took place from small notes and memoranda. At Chatsworth in October 1659, one lb of lump sugar was used to make preserve of roses. In September 1665, when the family left to go back to London, a note instructs that the remaining sugar in the larder was to 'go on preserving'. The Hastings family accounts moreover give a sense of what kind of fruit trees were growing. Their steward's accounts from the 1660s show that their tenants were selling fruits at a local market and using the money to pay rent. The family receive £6 15s 6d from the sale of apples, pears and gooseberries. And later, in 1669, 'more for fruites and rootes sold out of the orchard and gardern'.[111] The sale of these fruits at the local markets suggest

[109] Mrs Cromwell is painted as stingy and miserly, 'an hundred times fitter for a Barn then a Palace' and the book was a political tool to further denigrate the puritanical values of the protectorate. See: Anon., *Court & kitchen of Elizabeth commonly called Joan Cromwell: The Wife of the Late Usurper, Truly Described and Represented, and Now Made Public for General Satisfaction* (London, 1664) p. 26 and p. 57.
[110] Joan Thirsk, *Food in Early Modern England*: *Phases, Fads and Fashions 1500-1760* (London, Bloomsbury, 2006) p. 73.
[111] Folder 42, Box 19, Hastings Papers, Huntington Library, California.

that fruit was available to a wide range of consumers and could have been preserved by them too.

Servants, tenant farmers and labourers would also be fed out of the kitchens of elite households and thus the accounts from these houses can give us a better sense of the diets of poorer people. In the Huntington Library, there is an early eighteenth-century anonymous manuscript recipe book which charts the meals and dishes consumed in some large houses across England. It is a fabulously detailed document, including the table plans for large banquets, showing where each dish would have been positioned on the table. These lavish meals would have fed the wealthy, nevertheless, interspersed amongst the pages are a few details of what servants and visiting tradespeople also consumed. The comparison is quite stark. As opposed to the plethora of custards, sweetmeats and puddings consumed by the family, the servants' diet was modest - but it still contained sugar. The author notes that in winter, servants' breakfasts should be 'Small beer boyled with oatmeal and sweetened with treacle' and when she lists their weekly dinners, four out of the seven include some form of 'pudding', which was generally a mixture of flour, fat and sugar boiled in a bag.[112] These dishes were not extravagant or probably that tasty, but they did include sugar. Read together with the household accounts of the Richard Latham, a yeoman farmer from Scarisbrick, Lancashire, we can see that by the eighteenth century, ordinary consumers were certainly accustomed to sugar in their diets. Latham kept accounts from the 1720s onwards and over ten years from 1725-35, sugar and treacle together occupy on average 3.5% of his annual household expenditure and he buys them both with regularity, even in years when his total expenditure is low.[113]

Sarah F. McMahon has approached the composition of New Englanders' diets in another way. Rather than drawing on household accounts, she has broken down probate inventories in Middlesex County which included instructions for the amount of food to be left for the deceased's widow, so as to ascertain the dietary patterns of seventeenth-century consumers in different wealth brackets.[114] Her findings, transcribed in *Table 5,* suggest that, as with

[112] Cookery, 1703-1721, MS HM 58283, Huntington Library, California.
[113] Lorna Weatherill (ed.), *The Account Book of Richard Latham, 1724-1767* (Oxford, Oxford University Press/British Academy, 1990) pp. 3-29.
[114] In Chapter Four, I turn to sources similar to those used by McMahon to look at the importance of women's labour for turning sugar from a raw commodity to a palatable dish.

England, sugar and fruits were available to some of the poorest section of the population.[115] As might be expected, the inventories of the wealthy are more likely to include sugar and fruit but the goods appear across all wealth segments.

Table 6 Percentages of inventories in each wealth cohort, grouped by valuations of movable estate, that contain stores of food, weighted by season (1653-1674)

	£1-25	£26-50	£51-100	£101-200	£201 +
N	*13*	*39*	*59*	*61*	*33*
Fruit	10.1	10.4	3.5	12.8	17.1
Condiments*	12.8	6.6	19.4	21.5	37.5

Source: Registry of Probate, Middlesex County Probate Court, Cambridge, MA recorded in Sarah F. McMahon 'A Comfortable Subsistence: The Changing Composition of Diet in Rural New England, 1620-1840.' *The William and Mary Quarterly*, 42:1 (1985) p. 60.
*Condiments include Salt, sugar, molasses, honey, spices, vinegar, and pickles.

While sugar was an 'ordinary' ingredient, sugar and sugared goods did however retain their status as special or important foods, as they still do today. Throughout *Sweetness and Power* Sidney Mintz traced the way in which symbolic foods are often sugary foods. We eat cake on special occasions such as Christmas and birthdays and there is a propensity for gifts to contain sugar, chocolate being the obvious illustration. While sugar was clearly part of an everyday diet, we do see instances of it being used in a more symbolic way. Writing to Lady Elizabeth Hastings in 1705, Lady Catherine Stanhope laments that she had not sent the 'orange flower cakes' she had praised so highly and promises to bring them with her on her next visit.[116] In January 1711, the same Elizabeth Hastings records paying 'Mrs Botts daughter for a Simnel cake'. Simnel cakes are traditionally Easter cakes but Simnel became a catch-all term for any celebratory cake, including those eaten at Christmas. Sarah Logan's manuscript recipe book from early eighteenth-century Philadelphia includes instructions for a lavish 'Plumb Cake' made with cream, ale, spices and sweetmeats along with a pound of sugar. This cake should be iced with three pounds of double refined sugar whipped together

[115] This is just a snapshot of consumer preferences and indicative rather than conclusive. McMahon acknowledges the historiographical problems that arise when using probate inventories, e.g. that they are seasonal, represent the goods of wealthier members of the deceased. The most pressing to this study is that food is sometimes completely absent which suggests not that the dead were starving but they food has been deliberately left out of the record. Furthermore, it is important that she does not separate sugar from other condiments, meaning it is impossible to ascertain the frequency of the good's appearance *per se.*
[116] Lady Catherine Stanhope to Lady Elizabeth Hastings, September 12th, 1705 in G. H. Wheler (eds.), *Hastings Wheler Family Letters 1693-1704* (London, Privately Printed, 1929) p. 12.

with egg whites for 'two hours' in order that it be 'very thick and very white'. Such an elaborate cake was only for special circumstances, as Logan also provides a note that 'you need not make so rich without occasion' and can leave out the currants, spices, cream and butter if you want to make it simpler (though keep the sugar!).

English colonists also used sugar as gifts or items of exchange when negotiating with Native Americans. A letter dating from 1684, from Boston to Parliament, described English troops asking a group of local Sagamores to pledge allegiance to the English Crown and to lubricate the negotiations by providing their cooks with 'bread, corn, mutton, pork, fruit, sugar, wine, and strong water' along with clothing.[117] Gifts were also sent from the Caribbean to England or North America, possibly in the same ships as the raw sugar and molasses. 'One pott of preserved tamarines, two potts of orange mamalett, two pott of preserved oranges with fflowers and one head of sweetmeats which contains all or almost of our country ffruites' were the items sent to accompany a letter from Robert Gibbs in Barbados to the colonial administrator, William Blathwayt in 1704. In the letter, Gibbs celebrates the birth of his son and names Blathwayt as godfather.[118]

V.iii Sugar in Drinks

Sugar was also dissolved, drizzled and dropped into drinks. As I say above, Woodruff D. Smith makes the argument that sugar's place in medicinal beverages is what encouraged consumption of sweetened tea in the eighteenth century. While I agree with Smith on this point, I argue that sweetened tea emerged out of two separate genres of consumption. The first was the transformation of a medicinal drink into a quotidian domestic beverage. The other, which I discuss here, was a pre-existing familiarity with sweetened beverages. Ordinary consumers across England and North America drank other sweet drinks on a daily basis. Sugared wine, beer and cider were standard across the Atlantic world in the

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[117] 'America and West Indies: September 1684', in *Calendar of State Papers Colonial, America and West Indies: Volume 11, 1681-1685*, ed. J W Fortescue (London, 1898) pp. 682-694. *British History Online* [http://www.british-history.ac.uk/cal-state-papers/colonial/america-west-indies/vol11/pp682-694 Accessed: May 2020].
These interactions were not necessarily peaceful nor free of conflict, despite the tone with which they are recorded by the English. As Peter Mancall has shown, the exchange of sugar products for deerskins and fur, especially rum and other distilled liquors from the seventeenth century onwards, did great damage to the Indian population by facilitating alcoholism. See: Peter Mancall, *Deadly Medicine: Indians and Alcohol in Early America* (Ithaca, Cornell University Press, 1995).

[118] Robert Gibbs to William Blathwayt, May 15th, 1704, BL 410, Blathwayt Papers, Huntington Library California.

seventeenth century, while rum, made from distilled molasses, was making its inexorable ascent in popularity by descending down many consumers' throats.

Sugar was used as both a sweetener and as a fermenter. Adding sugar to beverages while they were being produced increased the alcohol content. The sugar was fermented by the yeast along with whatever grains or fruits were being used. This sometimes added a slight fizz to the end-product. Recipes for a variety of alcoholic beverages call for a small lump of sugar to be dropped into the bottle before sealing. John Evelyn advised that, when making cider, to place 'in each *bottle* a little piece of *white Sugar,* about the bigness of a *Nutmeg,* and this will set it into a little *fermentation,* and give it that *briskness* which otherwise it would have wanted'.[119]

As early as the 1500s, sugar was being consumed with and in wine. Perhaps the most famous consumer of the combination was Shakespeare's corpulent knight, Falstaff, who enjoyed the sherry-wine known as sack, together with sugar - so much so that he is given the nickname 'Sir Jack Sack-and-sugar'.[120] The custom lasted well into the seventeenth century and Samuel Pepys frequently mentions taking the two together.[121] The combination was not coincidental, but is rather a legacy of older forms of the sugar trade. Elizabethan tastes were for wines which were sweet, heavy and fortified. Many of these came from Atlantic islands, Madeira and the Canaries. 'Madeira' and 'Canary' proliferate throughout recipes and account books. As I described in Chapter One, these wine islands were also early sugar islands. Before West Indian and Brazilian production took off, these islands supplied both wine and sugar to Northern Europe. The two goods, therefore, would be produced, shipped, sold and consumed together.[122] Although wine islands stopped supplying sugar, the custom of consuming the two

[119] John Evelyn, *Sylva, or, A discourse of forest-trees, and the propagation of timber in His Majesties dominions as it was deliver'd in the Royal Society the XVth of October, MDCLXII upon occasion of certain quæries propounded to that illustrious assembly, by the Honourable the Principal Officers, and Commissioners of the Navy : to which is annexed Pomona, or, An appendix concerning fruit-trees in relation to cider, the making, and severall wayes of ordering it published by expresse order of the Royal Society : also Kalendarivm hortense, or, the Gard'ners almanac, directing what he is to do monthly throughout the year* (London, 1670) p. 45.
[120] William Shakespeare and David Scott Kastan (ed.), *Kings Henry IV Part I* (London, Arden, 2002) 1.2. 109–10.
[121] For example, in February 1661, William Penn, founder of the Pennsylvania colony dined at Pepys house where he was served 'Rhenish wine and sugar'. Robert Latham and William Matthews (eds.), *The Diary of Samuel Pepys, Vol. 2: 1661* (London, Harper Collins, 1971) p. 38.
[122] Barbara Sebek, '"Wine and sugar of the best and the fairest": Canary, the Canaries, and the Global in Windsor' in David B. Goldstein and Amy L. Tigner (eds.), *Culinary Shakespeare; Staging Food and Drink in Early Modern England* (Pittsburgh, PA., Dusquene University Press, 2016) p. 43 and Alberto Vieira, 'The Sugar Economy of Madeira and the Canaries, 1450–1650' in Stuart B. Schwartz (ed.), *Tropical Babylons: Sugar and the Making of the Atlantic World, 1450–1680* (Chapel Hill, UNC Press, 2006) p. 52.

together continued. John Evelyn commented in the 1670 that the '*English* being generally more for *insipid, luscious,* or *gross* Diet' have a 'universal hatred of *Oyls, French wine,* or *Rhenish* without *Sugar*'.[123]

Imported wines were towards the more expensive end of beverages and would have been consumed by fewer people. Ordinary consumers however, also had appetite for sweetened beverages and would add sugar to beer in the same fashion. Pepys records that after the Great Fire of London, he 'saw good butts of sugar broke open in the street, and people go and take handsfull out, and put into beer, and drink it'.[124] In the 1670s, in Newbury, Massachusetts, housewife Beatrice Berry had tried to placate her angered husband by bringing him some of her 'Sugar & Beare'.[125] Sugar was also consumed in drinks which have fallen out of fashion today, such as the 'sack posset' which Ann Clarke noted in her recipe book. This was a warming combination of sack, eggs, spices and sugar that was spooned communally from large pots. The Chatsworth accounts also show sugar was used to make 'Almond milk'. While now this is considered a healthy equivalent to dairy, Hannah Woolley describes a rich scented drink of blanched almonds, rose water, violets, dates, sugar and salt.[126]

Cheaper, domestically produced wine was often bottled with sugar as well. Such a practice would add to the alcohol content, and would preserve it for longer. In November 1659, the Chatsworth servant Gregory was given two pounds of sugar 'to bottell wine'.[127] Beer and cider were the most common beverages for everyday consumers and these, too, included sugar and sugar products. Making cider was an industry at Donington Park, home of the Hastings family. In the autumn of 1669, the steward records payment of two pounds eight shillings to 'George Garrett for three days work about making syder' and later he pays Thomas Sandford one pound two shillings and nine pence 'more for bottles, corke and sugar for the syder, and for oate for the horse'. The amount of money paid out to these men suggests they made a lot, enough for twenty-four bottles to have been shipped to the London

[123] Evelyn, *Sylva*, p. 3.
[124] Robert Latham and William Matthews (eds.), *The Diary of Samuel Pepys, Vol. 7: 1666* (London, Harper Collins, 1971) p. 278.
[125] George Francis Dow (ed.) *Records and Files of the Quarterly Courts of Essex County*, Vol. 4. (Boston, Essex Institute, 1914) p. 297.
[126] Wooley, *The Queen-Like Closet*, p. 120.
[127] C.29B, Chatsworth House Archives, Derbyshire.

house that winter.[128] Apples grew well in New England and cider was produced in the same way on the Western edge of the Atlantic.[129]

Beer, however, was a point of difference between the two countries and this was again due to the wider availability of molasses in North America. Although slightly later than our period, George Washington famously recorded his own recipe for brewing beer using molasses. In a notebook dating from the 1750s, which survives from his time stationed as a colonel in the Virginia Militia at Fort Loudon in Pennsylvania during the French and Indian War, Washington recorded a recipe for 'small beer' which included three gallons of molasses to every thirty gallons of boiled hops. It was an easy and quick recipe to make and probably was intended to quench the thirst of many. The recipe made about 150 litres but the preparation-time was less than two days (three hours of boiling bran hops, time to stand, then 24 hours to 'Work in the Cooler'). The molasses would have masked the unpleasant taste of a brew made in haste.[130] While Pamela Sambrook explains that sugared beer was a rarity in England, there does seem to be some evidence that molasses and sugar made their way into English beer.[131] Thomas Tryon includes a recipe for beer that asks for sugar or treacle to be placed in the top of the bottle when sealing, and the Chatsworth accounts note that some sugar went into 'Salisbury ale'.[132] Nevertheless, the practice seemed to be more familiar amongst North America, most likely due to the wide availability of molasses. In W. Y Worth's *Cerevisiarii comes, or, The new and true art of brewing* published in 1692, the author provided a recipe for 'Good Drink made from Molasses' which was a beer-type mixture with added molasses. Worth explains that it would do 'good service to those [colonies] where sugar and molasses plentifully abound'.[133]

More than any other beverage, rum made from molasses was central to the diets of North Americans. Rum became much more important to the diets of Englishmen by the mid-eighteenth century, but during the seventeenth century, it was less widely consumed.[134] This was acknowledged in 1699, when an anonymous recipe book entitled *England's happiness*

[128] Folder 42, Box 19, Hastings Papers, Huntington Library, California.
[129] Laurel Thatcher Ulrich, *Good Wives*, p. 23.
[130] Jay Fondin, *Recipe for Small Beer*, Mount Vernon Digital Encyclopaedia [https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/recipe-for-small-beer Accessed: July 2020].
[131] Pamela Sambrook, *Country House Brewing in England 1500-1900* (London, A&C Black, 1996) p. 140.
[132] Tryon, *The Way to Get Wealth*, p. 73 and C.29B, Chatsworth House Archives, Derbyshire.
[133] W. Y Worth, *Cerevisiarii comes, or, The new and true art of brewing* (London, 1692) pp. 62-63
[134] Carole Shammas charts this growth in *The Pre-Industrial Consumer*, p. 83.

improved explained that rum was most commonly made in the 'sugar-islands' but could be made in England. The recipe is vivid and illuminating:

'In *England* it may be made after the same manner, with the Washings of Sugar-Hogsheads or Chests, and Sugar-Bakers or Sugar-Refiners Refuse, or such Foot or Dross-Sugar as is fit for no other Use but that, and Distilling; adding Sweet Herbs and Spices, as Ginger, Cloves, Cinnamon, Mace and Nutmegs; and you may have a pleasant Liquor, at a cheap rate: You may put into it Balm, Mint and Hysop, according to the quantity you make; and being bottl'd, it will prove a curious refreshing Drink, both in Summer and Winter: You may add a little Molassus, to make it a stronger Body.'[135]

The very dregs of sugar, the waste product from refining, are used to create a 'curious' drink 'at a cheap rate'. Compared to the numerous recipes for wine, cider, beer, syrups and other drinkable concoctions which cover the pages of seventeenth-century recipe books, rum appears very infrequently and the recipe above suggests that it was not a familiar or widely consumed beverage. In contrast, rum was fundamental to North American consumption patterns, as well as those in the West Indies. In his description of Barbados, Richard Ligon described 'kill-devil', a liquor made from the skimmings of sugar processing which had 'the virtue to cure and refresh the poor Negroes whom we ought to have a special care of, by the labor of whose hands our profit is brought in'.[136] Rum distilleries spread the length of the North-Eastern coast of the mainland American continent. As early as 1648, Emmanuel Downing boasted to John Winthrop that the rum made in his Salem distillery was 'desired more and rather than the best spirits they bring from London'.[137] McCusker notes that the earliest distillery in New York was set up on Staten Island in 1664 and that by 1770, approximately 140 rum distilleries operated between Georgia and Newfoundland, producing almost five million gallons of rum per year.[138] The widespread availability of molasses, from both British Islands and smuggled in from other European islands, meant that rum became one of the most important mediums through which North Americans consumed sugar. Although there were a number of similarities, the plentiful supply of molasses, which has left a sticky residue throughout the whole of this chapter, reveals the key point of difference in the consumption patterns of the two countries.

[135] Anon., *England's Happiness Improvd* (London, 1699) p. 100.
[136] Richard Ligon, *True & Exact History,* p. 27.
[137] Emmanuel Downing quoted in Newell, *From Dependency to Independence*, p. 57.
[138] McCusker, *Rum and the American Revolution*, p. 434.

Section VI Conclusions

This chapter sets out to conclusively redraw the chronology of sugar consumption in the British Atlantic. Combining quantitative and qualitative analysis, it shows the prevalence, indeed, the ordinariness of sugar in the two countries by 1700. Trade statistics show that large amounts of sugar were entering the ports of England and British North America during the second half of the seventeenth century. Consequently *per capita* consumption of sugar was higher than has been previously recognised. These national figures are underpinned by a wide array of local source material which shows just how far sugar spread before 1700 and how it travelled into the homes and mouths of ordinary consumers in a number of forms. Sugar was widely available, in small amounts, at small prices, on both sides of the ocean. It was baked in pies and puddings, stirred in wine and strong waters and sucked as panacean pastilles and pills. There were many similarities in the way in which sugar was consumed across this broad geographical area, and the chapter has drawn consumers on both sides of the Atlantic together, connected by a common sweet tooth. The chief distinction in taste between the two countries arises in the different ways in which they consumed molasses

Sugar consumption kept pace with the increase in production during the seventeenth century. Understanding just how prevalent sugar was in this early time period provides valuable support for the arguments made elsewhere in the thesis, which engage more heavily with the historiography of economic change, the development of transatlantic capitalism, and the role played by Caribbean slavery in such narratives. The high level of local demand seen in this chapter provides further evidence for how the industry was able to flourish. I finish this chapter, by briefly suggesting some of the ways that the high levels of demand for sugar are in dialogue with broader narratives of economic change and development. Sugar's ubiquity chimes a cord with some of the major themes in current British Economic History. As E.A. Wrigley has argued, 'two capitalisms' were necessary for the transformation of the British economy and the ensuing industrial revolution: the release of the capital held in fossil fuels, and the capitalization of the market economy in which labourers work to consume.[139] Sugar was important to both. In Chapter Two, I argue that heat-intensive sugar refining was an example of early industrialization and it released capital from coal. Here, I demonstrated how sugar encouraged a capitalized market economy across rural England and thus helped to create a population of labouring consumers.

[139] E. A. Wrigley, *Energy and the Industrial Revolution* (Cambridge, Cambridge University Press, 2010) p. 22.

This chapter, therefore, provides another facet to the broader interpretation of the Williams thesis: the wide-ranging archival evidence it draws upon demonstrates how the sugar, the product of the labour of enslaved people, enabled the early commercialization of the laboring classes. My revised *per capita* figures for England have implications for the understanding of 'the industrious revolution' and the most recent scholarship on forms and durations of work during the seventeenth century. My adjusted numbers provide further support for, Stephen Broadberry *et al's* argument that GDP per capita rose in England over the course of the seventeenth century. Broadberry *et al*'s output-based argument relies on workers' motivations to work harder. They recognize that 'from the late seventeenth century, many labourers chose to work harder in order to afford the sugar… that trade and industry were beginning to furnish'.[140] Broadberry *et al*, however draw on smaller *per capita* figures calculated by Jan de Vries.[141] My figures show greater *per capita* consumption at an earlier time period, lending even greater weight to the authors' assertions. [142] As Craft and Mills have shown, this progress was not linear. According to their calculations 'positive trend growth in real GDP per person began between the end of the Civil War and the Glorious Revolution and then moderated in the early eighteenth century before accelerating to over 1 percent per year by the 1830s'.[143] The acceleration of growth in the seventeenth century was important however. Craft and Mills posit that this was a period of 'Smithean' growth associated with the 'commercial revolution' caused by expanding international trade, urbanization and the growth of London.[144] Jane Humphries and Jacob Weisdorf have also argued too that the conditions for sustained economic growth can be pushed back into the

[140] Stephen Broadberry *et al*, *British Economic Growth* (Cambridge, Cambridge University Press, 2015) p. 415
[141] Broadberry *et al* use figures calculated by Jan De Vries when discussing *per capita* consumption of imported groceries. Like Carole Shammas, Jan de Vries also draws on Sheridan's London figures for the 1660s and arrives at a figure of c.1.0kg per head or 2.2lbs. See Appendix B for more detail on this calculation error. De Vries's calculations do not follow the same date range as Shammas but for the period 1700-1710, he arrives at an average of 2.6kgs per head or 5.73 lbs. My new calculations suggest this figure was 1.7 lbs greater, ten years earlier. See: Jan de Vries, *The Industrious Revolution*: *Consumer Behaviour and the Household Economy, 1650 to the Present* (Cambridge, Cambridge University Press, 2008) p. 18, Broadberry *et al*, *British Economic Growth* p. 287.
[142] A note on calories: Broadberry et al argue that the 'collective contribution [by tropical groceries] to the country's kilocalorie supply was slight'. (Broadberry *et al*, *British Economic Growth*, p.286.) Unlike Mintz, who argues that sugar was an important source of calories for industrial workers, my revised figures are not enough of an increase to argue there was substantial effect on calorific consumption.
[143] Nicholas Crafts & Terence C. Mills, 'Six Centuries of British Economic Growth', *European Review of Economic History*, 21:2 (2017) p. 149.
[144] Nicholas Crafts & Terence C. Mills, 'Six Centuries of British Economic Growth', p. 149.

mid-seventeenth century.[145] Sugar played a role here. A greater availability of sugar, the product of enslaved labour, throughout the second half of the seventeenth century, would have influenced the choice between labour and leisure during this period. By 1700, 'industrious' workers could have been motivated by the prospect of sugar, to work harder and longer in order to earn the wages which would allow them to consume. As Eric Williams and his later followers have argued, 'the increase of consumption goods called forth' by the triangular trade 'inevitably drew in its train the productive power of the country'.[146] Williams meant this in terms of factory production and industrial output, here I apply the reasoning to the early industrious workers. Sugar was an early consumer desirable and it motivated workers whose labour facilitated rising British economic output.

The threads which link consumption of sugar *per se* and the industrial revolution can be spun back into the seventeenth century. The widespread inclusion of cheap sugar into the diets of the poorest industrial workers in the nineteenth century and the contribution of the good to the poor-health of factory workers has occupied the majority of scholarship on this topic thus far. Sidney Mintz argued that the cheap, nutritionally negligible, calories from sugar which sustained factory workers were a further form of capitalist exploitation. This was especially true in the case of women who often relied on sweetened tea in lieu of a meal while any available animal protein was given to the male breadwinner.[147] Carole Shammas has located this phenomenon in the seventeenth century arguing that: 'The abysmal dietary situation of the early nineteenth century industrialization period . . . may well have had its origins a century earlier'.[148] Drawing on Frederik Eden's 1797 budgets which demonstrated that consumers spent 11 % of their incomes on sugar, treacle and tea, Shammas noted the preference for sugar over animal protein: 'If they [labourers] had unlimited resources no doubt they would have combined their taste for the new commodities with more cheese and meat. When forced to choose, though, they preferred the sugar, tea, butter, and bread'.[149] I position the story of sugar consumption and industrialization even further back in time and cast it in a slightly different light. This is not to argue that seventeenth century growth was the same as nineteenth century growth. As Craft and Mill's GDP *per capita* figures show,

[145] Steve Broadberry et al, *British Economic Growth* and Jane Humphries and Jacob Weisdorf, 'Unreal Wages? Real Income and Economic Growth in England, 1260-1850', *The Economic Journal* (Online version: https://ezproxy-prd.bodleian.ox.ac.uk:4563/10.1093/ej/uez017)
[146] Eric Williams, *Capitalism and Slavery*, p. 98. Quoted in Zahedieh, 'Eric Williams and William Forbes, p. 22.
[147] Mintz, *Sweetness and Power*, p. 183.
[148] Shammas, *Pre-Industrial Consumer,* p. 145.
[149] Shammas, *Pre-Industrial Consumer,* p. 145.

there was certainly an unprecedented acceleration in industrial activity and output in the early nineteenth century. Rather, I argue that trade in and consumption of sugar contributed to the long-run period of economic change and development which led up to the spurt of growth in the nineteenth century. In Chapter Two, I argued that the sugar refinery was a site of early industrialization; one example of the early sorts of heat-intensive industries that became more sophisticated over the following two centuries. In this chapter, rather than focusing on diet composition, or calorific or nutritional value, I show sugar to be important in the early shaping and encouraging of consumer demand. Such consumer demand helped to create a commercial and an industrious population.

In Chapter Four, I apply this logic to Colonial New England and show how women's labour was vital to the mercantile ventures of New England. Desirous of a sugar rush, women transformed sugar from a raw commodity into the kind of highly palatable foodstuffs described in this chapter. They also produced goods for the market to exchange in return for sugar. Their labour embedded demand for sugar, and pathed the route it took from the port to the plate. The mercantile enterprise, the economic foundation for the colony, intrinsically relied on their domestic economic activity.

Chapter Four – Goody Gavate's Gingerbread: cake-baking, women's labour and the sugar trade in New England

Contents

Section I Introduction

I.i Tabby Hoare and Goody Gavate[1]

In June 1678, in front of the attendees of the Essex Quarterly Court in Salem, Massachusetts, townsperson John Bond testified that he had carried wood to a certain Mr Hale's house during the winter and on arriving 'had found Tabby Hoare eating an apple pie with her lap full of apples'.[2] Bond suggested that Hoare had stolen the apples as well as the other ingredients, most probably sugar, butter and flour, to make the pie she was enjoying. Bond's testimony was one of many in a case brought against several women in the Hoare household. These women were charged with receiving stolen goods, often food, from Margaret Lord, a servant to Mr Hale, over the course of several years.[3] The court case is quite protracted, covering many pages in the court records, and drawing upon the testimony of a number of local men and women who had interactions with the Hoares and were involved in their illicit activities. Reading over the records, the case has a slightly overblown feel to it, with the condemnations and finger-pointing become more and more unrestrained as the time goes on. It is hard to ascertain exactly just how guilty the Hoare women were.

Nevertheless, the description of Tabby Hoare by John Bond is a powerfully evocative one. The image of Tabby forms easily in our minds' eye and would certainly have done so too in the minds of strongly Christian seventeenth-century inhabitants of the Massachusetts Bay Colony who were listening to Bond as he laid out his testimony. Drawing on lapsarian iconography, Bond (whether intentionally or not) associates Tabby with Eve in the Garden of Eden – the first woman to sin, also by consuming a stolen apple. Furthermore, her consumption of the pie spoke to another familiar gender stereotype, that of women's proclivity, indeed greediness, for sweetness and sweet things. In Bond's description, Tabby was doubly sinful, guilty of both greed and theft.

[1] The argument made by this chapter is somewhat narrower than the chapters which have come before them. The impossibility of consulting further archival sources in the US, owing to the Covid pandemic, has meant that I have had to rely more extensively on printed documents than I would have hoped. As I highlight in the Conclusion, the chapter serves to open up many more questions than it answers. I see it as a valuable jumping off point from which to investigate women's contributions to the sugar trade more widely as well as the role of sugar in the early stages of North American capitalism.
[2] George Francis Dow (ed.), *Records and Files of the Quarterly Courts of Essex County 1636-1686*, 9 Vols. (Salem MA., Essex Institute, 1911-1975), Vol. VII, p. 50.
[3] Dow, *Records and Files*, Vol. VII, pp. 42-55.

We can compound the historical record of Tabby as economic actor (albeit one working outside the confines of the law), with the comparatively more neutral, or at least less iconographically inflected, archival record of Goody Gavate which is found in the account book of Robert Gibbs, a merchant based in Boston.[4] In the small ledger, we read of Gibbs's dealings with many women in the Boston area, one of whom was Goody Gavate. Gibbs' account book (continued by his wife, Elizabeth Gibbs Corwin after his death) recorded his and Elizabeth's transactions with Gavate over a number of years from the 1670s to the 1690s. Gavate was a cake-maker and the Gibbs supplied her with molasses, sugar, wheat and ginger. She would transform these ingredients into gingerbread, cakes, and puddings, which she would then bring back to the shop in exchange. These sweet treats were valued at 2 to 12 pence. The more expensive of these would have been large and we can presume that the Gibbs sold them on to their other customers. The sheer number of cakes delivered also supports this hypothesis.

Hoare's and Gavate's appearance in the archives are cornerstones for a discussion of early North American trade in and consumption of sugar. While we cannot be certain that these two women ever met (Tabby Hoare lived in Salem and Goody Gavate lived 20 odd miles away in Boston), they were alive at the same time, between 1670 and 1700, and their use of sugar and sugared goods is emblematic of ways in which women, women's labour and sugar were intimately and importantly connected during this period. Using examples like Tabby Hoare and Goody Gavate, this chapter explores the ways in which New England women facilitated the spread of sugar throughout the local economy in the seventeenth century, and argues for the importance of this activity to the sugar trade and the New England economy more generally. I show that women's trade in sugar, both legal and illicit, was crucial to the ways in which sugar was consumed. I argue that the labour of women spread sugar throughout the community and enabled its ingestion by ordinary consumers. It was women's labour that transformed sugar from a commodity sitting in a boat at port into a dish on the table. Women traded the products of their domestic labour for sugar and then baked it into the cakes and pies which were both appealing and calorific.

By looking at the local, on-the-ground, economic activity of women in the seventeenth century, we can see just how embedded transatlantic trade was within the Massachusetts Bay

[4] Robert Gibbs Business Papers 1634-1673, MSS Octavo Vols. G, American Antiquarian Society, Worcester MA.

Colony, and just how extensively sugar shaped the local economy. There was a consuming cycle: merchants imported sugar which was bought by consumers. Women then worked with this sugar, making cakes and pies, some of which they would exchange back on the market, so that they would have greater facility to buy more sugar, and thus the cycle began again. Women produced goods *for* the market, in order to consume goods *from* the market. While married women's economic transactions were putatively controlled by the legal doctrine of couverture, which meant that her personhood and property were subordinated to her husband, we see women working around their legal status to engage fully with the transatlantic economy.[5] In doing so, they forged a strong base of consumer demand for sugar, which supported the ever-growing mercantile activity within the Boston area. Women's trade in and consumption of sugar, strengthened the ligaments of trade which enabled the colony to flourish in later years.[6]

An examination of the final stages of the sugar supply chain, in turn, also sheds light on the distinctive nature of the New England economy in the second half of the seventeenth century. By 1700, New England was turning into a commercial economy, fuelled by imports of slave-produced sugar from the Caribbean. The period was certainly one of rapid economic change. Yet, through women's interactions with sugar we also see that vestiges of an older form of economy remained. The informal ways in which women exchanged sugar, through local barter and gift economies, demonstrate some of the ways in which non-commercial exchange persisted, and helped to integrate the good into the community.[7] Through trade in sugar,

[5] Tim Stretton and Krista J. Kesselring make the point that 'if followed to the letter, the legal restrictions of couverture would have made ordinary life all but impossible'. The strict reading would have prohibited women, for example, from provisioning her home, or buying wool to spin and sell the finished product. Instead, most of the rules of couverture were to 'provide clarity and direction in times of crisis of after death' rather than governing every transaction. Tim Stretton and Krista K. Kesselring (eds.), *Married Women and the Law: Couverture in England and the Common Law World* (Toronto, McGill-Queen's University Press, 2013) p. 8.
[6] Most recently, Mark Peterson has argued that by the 1700s, Boston was at full-strength with wide Atlantic trading circuits and cultural ties, both within and beyond Britain's empire. Mark Peterson, *The City-State of Boston: The Rise and Fall of an Atlantic Power, 1630-1865* (Princeton, Princeton University Press, 2020) p. 12.
[7] From the outset, the emigrants to New England embraced the mercantile sector and developed strong overseas trading links. By the mid-eighteenth century, the merchant class was economically and politically dominant across British North America. One of the most lucrative elements of their enterprises was to control the supply of raw materials to the West Indian plantations. See below p. 206, and Bernard Bailyn, *The New England Merchants in the Seventeenth Century* (Cambridge MA, Belknap Press, 1955). One point of debate which has plagued the historiography of the period is the apparent irreconcilability and constant tension between such profit-oriented enterprise and the puritan religious values of the colony. In order to define such an entanglement of anti-materialist religious values with profit-oriented enterprise, historians have drawn upon terms like 'moral economy' and 'competency' to describe an economy which rather than seeking wealth outright, was motivated to achieve a modest prosperity and 'comfortable independence' fitting with a culture of 'polite and commercial' cultural identity. Daniel Vickers, 'Competency and Competition: Economic Culture in Early America', *William*

therefore, we can see what I describe as a 'capitalist energy' emanating from Early New England. On the one hand, women's trade in sugar shows New England to be oriented towards the transatlantic market. There was an entrenched enthusiasm for imported goods which depended on well-established long-distance trade networks, a system of credit, and a willing acceptance of for-profit enterprise. On the other hand, I use the term 'energy' however, to emphasise that this was not fully-fledged capitalist behaviour. Instead, these fifty years were a period of transition in which mercantile activity relied on domestic labour and informal exchange. The domestic sphere and the transatlantic marketplace were interconnected at this point in time.[8] Through sugar therefore, we are able to see how the colony's economy blended tradition and modernity.

I.ii Chapter Outline and Structure

In discussing the ways in which New England women bought, sold and ate sugar, I draw upon, and am in dialogue with, a number of different historiographical literatures. It is the intention of this chapter to bring them together in conversation with one another, so as to create a fuller picture of the historical significance of women and sugar. Such a picture also makes interventions in these scholarly literatures, and argues for areas of adjustment. In *Sections I.iii and I.iv*, I introduce the most substantial of these: first, the place of women and second, the role of the Caribbean in the history of North American capitalism. Both of these subjects, I argue, have been neglected in this early period. In *Section II*, I outline the parameters of the chapter in more detail by describing the specifics of the source material, the geography and the time period under consideration. Finally, in *Sections III* and *IV*, I return to Tabby Hoare and Goody Gavate and their contemporaries to explore the many ways in which women facilitated the spread of sugar into the consuming environment. I divide the women's activities into two different categories. While Tabby's consumption of sugar was outside of the law, Goody Gavate's was perfectly legal. As such, I consider both legal and illicit trade in

and Mary Quarterly, 47:1 (1990) p. 3 and Phyllis Hunter, *Purchasing Identity in the Atlantic World: Massachusetts Merchants, 1670-1780* (Ithaca, Cornell University Press, 2001) p. 4.

[8] Allan Kullikoff has emphasised the importance of non-commercial exchange within the agrarian community to the development of the North American economy. Although writing about a slightly later period, he highlights the perpetuation of local exchange between households even as the commercial market expanded. He suggests that non- or anti-capitalist behaviour could exist alongside an ever-more powerful market and that these exchanges were motivated by a desire to maintain social networks. With early trade in sugar, we see a similar phenomenon in an urban environment – non-commercial exchange holding fast within a burgeoning commercial world. Allan Kullikoff, *The Agrarian Origins of American Capitalism* (Charlottesville, UVA Press, 1992) pp. 13-34.

sugar to demonstrate the ways in which the good spread throughout society and show, in both sections, how sugar travelled through both formal and informal economies. Through sugar we can see how the commercial and non-commercial co-existed and indeed supported each other. Moreover, throughout the thesis as a whole I have argued for the importance of considering both economic structures and the inherent desirability of sugar when trying to understand the good's spread. Looking at both legal and illegal trade aids this endeavour. Legal trade is illuminating about the economic infrastructure while illegal trade tells us more about aspects of sugar's desirability. In *Section V*, the conclusion, I argue for the significance of these findings by exploring how, through looking at sugar, we can characterise the seventeenth-century New England economy with more precision.

I.ii Historiography I Women and the New History of Capitalism

Much of this thesis thus far has been orientated around the Williams thesis and arguments connecting slavery to the British economy. The historiography with which this chapter engages is slightly different, as Williams did not focus with as much concentration on North America. Instead, the chapter turns to work broadly defined as the 'New History of Capitalism' (NHC), to which Sven Beckert's work is a major contribution and which focuses on the importance of slavery to the U.S. economic development. In a recent article entitled 'Slavery and the new history of capitalism', however, Trevor Burnard and Giorgio Riello enumerate a set of criticisms and correctives to the work of the NHC. One of the criticisms levelled is the absence of gendered analysis in the work of the NHC.[9] This line of argument encompasses the work of Nan Enstad, Amy Dru Stanley and Ellen Hartigan O'Connor, who all assert that within much NHC literature, women only exist as secondary and minor economic actors, or do not appear at all.[10] Burnard and Riello suggest that this is to the detriment of understanding the chronology of the rise of the profit-orientated and rapacious capitalism with which the NHC is concerned. Taking gender into consideration, they argue, forces historians to reckon with the importance of elite and middling eighteenth-century British women's role as consumers – especially as consumers of cotton clothing.[11] They also

[9] Trevor Burnard and Giorgio Riello, 'Slavery and the New History of Capitalism', *Journal of Global History,* 15:2 (2020) pp. 225-244.
[10] Nan Enstad, 'The "Sonorous Summons" of the New History of Capitalism, or, What Are We Talking About When We Talk About Economy', *Modern American History*, 2:1 (2019); Amy Dru Stanley, 'Histories of Capitalism and Sex Difference', *Journal of the Early Republic*, 36:2 (2016) and Ellen Hartigan-O'Connor, 'The Personal is Political Economy', *Journal of the Early Republic*, 36:2 (2016).
[11] Burnard and Riello, 'Slavery and the New History of Capitalism', p. 231.

mention, albeit in less depth, the importance of the social ritual of the tea-table and women's domestic consumption of slave-produced food and drinks.[12] This, they assert, asks us to re-consider the chronology and geography of capitalism. Rather than focus on the nineteenth-century United States, we need look back to the eighteenth century, as well as to Britain and Asia to understand the twin rise of slavery and capitalism.

The emphasis Burnard and Riello place on the importance of sugar, consumption, gender, and an earlier chronology strikes a chord with the arguments I make throughout the entirety of this thesis. However, there are areas in which their assertions can be adjusted, and considered with finer grain detail. Gender and consumption is one such area, and although I centre my arguments and evidence here in North America, many of the points I lay out hold true for English women. In this section, I consider in more depth the ways in which women were consumers *and* producers of sugared goods. Unlike Burnard and Riello, I move away from the refined elegance of the eighteenth-century tea-table and into the sweatier, demotic world of the kitchens and shops belonging to labouring and trading women in the previous century. I also introduce a new concept, one that is not considered by Burnard and Riello: the idea of women's domestic production and women's role as tradespeople. We see quite clearly that that women's economic activities which involved sugar were not limited to eighteenth-century consumption. Looking at the economic activities of women allows us to see just how extensive the sugar trade was in New England at this point, and why it was an important ingredient for their economy.

In doing this, I build upon arguments outlined by Ellen Hartigan O'Connor in 'Gender's Value in the History of Capitalism'.[13] Though she takes the nineteenth century as her focus, Hartigan O'Connor provides a valuable framework for how we can understand the importance of women to the history of capitalism. She also highlights some of the ways that the NHC has left out the economic role of women. One of her chief arguments is that nineteenth-century capitalism and nineteenth-century ideas of gender created each other. Nineteenth-century capitalism relied on a gendered division of labour, and therefore articulated specific gender roles. In order to support the productive labour of men, women

[12] Burnard and Riello, 'Slavery and the New History of Capitalism', p. 241.
[13] Ellen Hartigan O'Connor, 'Gender's Value in the History of Capitalism', *Journal of the Early Republic*, 36:4 (2016) pp. 613-635.

were forced out of the traditional economic sphere and into domesticity.[14] Subsequently, these roles have become fixed and naturalised, and we, as historians, are less likely to interrogate them sufficiently. However, as Hartigan O'Connor argues 'Households, laundry, and childbearing were not static realms upon which the economy acted; they were dynamic pieces of women's and men's lives that all had value, in terms of sustaining life, expressing care, and channelling social energies'.[15] The household in its entirety enabled productive labour and therefore 'historians looking to understand labour, have to understand households and the families within them'.[16] Reading backwards into the seventeenth century from Hartigan O'Connor's nineteenth-century vantage point, we can apply the same logic. The legacy of nineteenth-century gender norms still clouds our historical vision and consequently, we have not sufficiently considered women's roles in seventeenth-century transatlantic trade.[17]

Hartigan O'Connor is also concerned specifically with ordinary women's consumption. However, unlike Burnard and Riello, she contends that '*consumption was work'* (My italics).[18] Rather than adhering to a narrow understanding of consumption, one where elite women responded to the goods placed in front of them, Hartigan O'Connor asserts that, at a fundamental level, consumption both required and encouraged work. Making, selling, trading, and eating goods required that women labour; in turn, this labour had value. I employ such a framework here: women and women's work forged the essential path along which sugar had to travel in order to reach the hungry mouths of consumers. Without this path,

[14] Hartigan O'Connor is in dialogue with Jeanne Boydston's influential work on women and the emergence of capitalism, which I discuss in more detail below (p. 174). Boydston explores how the developing reliance on specie and money in the eighteenth century 'weakened the visible parallels between men and women's work'. By the nineteenth century, there was an emergence of much more specific understanding about what constituted economic and non-economic terrain. Anything that was not directed to a cash-market was questionable as an economic activity and as such, the status of domestic work diminished. Women's domestic labour was one such activity. See: Jeanne Boydston, *Home and Work: Housework, Wages, and the Ideology of Labor in the Early Republic* (Oxford, Oxford University Press, 1990) pp. 26-27.
[15] Hartigan O'Connor 'Gender's Value in the History of Capitalism', pp. 634-635.
[16] Hartigan O'Connor 'Gender's Value in the History of Capitalism', p. 618.
[17] This has been rectified somewhat in recent years, for example, Misha Ewen has considered the role of women investors in the Virginia Company. Misha Ewen, 'Women Investors and the Virginia Company in the early Seventeenth Century', *The Historical Journal,* 62:4 (2019). Susannah Shaw Romney has traced women's role in the colonization of New Netherland '"With & Alongside his Housewife': Claiming Ground in New Netherland and the Early Modern Dutch Empire', *The William and Mary Quarterly*, 73:2 (April 2016). Looking further back, James McWilliams explored the role of women's local production as a facilitator of mercantile activity in New England. I draw on McWilliams arguments extensively in this chapter. 'Butter, Milk and a "Spare Ribb": Women's Work and the Transatlantic Economic Transition in 17th Century Massachusetts', *New England Quarterly*, 82:1 (2009).
[18] Hartigan O'Connor 'Gender's Value in the History of Capitalism', p. 625.

without this access to the palates of consumers, transatlantic trade would have been much more difficult to sustain.

I.iv Historiography II The Caribbean and the New History of Capitalism

This chapter also articulates the importance of the Caribbean to the development of American Capitalism. Burnard and Riello make a similar argument. They re-iterate the oft-made criticism that the NHC focuses too narrowly on the nineteenth- and twentieth-century United States, precluding a fuller understanding of the international and early roots of capitalist activity in North America.[19] The authors assert that the precipitous rise in US cotton exports has to be understood in light of the robust consumer base in the United Kingdom, created by, amongst other things, the sugar trade. However, they are concerned more with the ways in which the British domestic economy enabled the later growth in the American one, rather than focussing explicitly on the importance of the Caribbean in and of itself.

Although not explicitly writing under the banner of the NHC, there is an extensive body of scholarship which considers the role of Atlantic trade, and particularly the place of New England merchants, in the growth of the early English and British American colonies. This work is strongly influenced by Bernard Bailyn's *New England Merchants in the Seventeenth Century* and considers how New England merchants wrested open foreign markets and incorporated the coastal ports of British America into the wider transatlantic trading community. According to Bailyn, in New England, these merchants brought the inhabitants 'from the parochialism of rural and Puritan New England to the cosmopolitanism of commercial Britain'.[20]

The focus of these studies, however, invariably centres on flows of trade in a limited number of directions. Traditional scholarship, centred on trading connections between New England and the Caribbean, pays significantly less attention to the northward introduction of sugar into the domestic market receives than it does to the shipping of North American raw materials southwards. It is comparatively rare to find a study which considers how imports *from* the Caribbean affected the North American economy and the growth of North American capitalism. The most recent study to rectify this is Marion Menzin's unpublished doctoral

[19] Burnard and Riello, 'Slavery and the New History of Capitalism', p. 227.
[20] Bailyn, *New England Merchants*, p. 143.

thesis. Menzin traces consumer demand for sugar in New England until 1700. She argues that the Massachusetts Bay Colony and Barbados should be considered as 'twin colonies' – mutually influential and inextricable from one another. The links between the two created an 'interdependent sugar and slavery region'.[21] She shows that sugar was widespread across the Bay Colony in the seventeenth century and an important part of the diets of ordinary people. The roots of such consumer behaviour stemmed from the emigrants' habituation to sugar in England. These emigrants created a market for the product in their new homeland. Such strong consumer demand for sugar within British North America was fundamental to the growth of the sugar plantations, enslavement, and to the development of the sugar trade.[22] Menzin's dominant argument is that demand for sugar pre-existed supply. New Englanders did not incorporate sugar into their diets because of 'social and economic changes brought about by capitalism – rather sugar dependency fostered capitalistic behaviours'.[23] Desire for sugar amongst consumers encouraged merchants to turn towards the plantations in the Caribbean and to procure slave-produced goods; to build ships, to grow timber, to farm fish, to move beyond subsistence and produce surplus to trade in an international marketplace. Demand for sugar constituted the first 'consumer revolution' in North America and the emergence of capitalist behaviour during this period was as a result of 'pent-up consumerism'. Consumption of sugar was a driver of socio-economic change.

Menzin's arguments need to be read alongside the work of Barbara Solow who argued that the slave-sugar complex, and the commercial activity which accompanied it, 'existed in miniature all along the route from Palestine to Crete to Madeira to the Canaries to Sao Tome to Brazil and to the Caribbean'.[24] Early experiments in sugar agriculture relied on enslaved labour, long-distance trade networks and complex financing. According to Solow, until the nineteenth century, 'wherever sugar and slavery went, a web of international trading flows in capital, merchandise, labour supply, and shipping was woven'. [25] Rather than highlighting the importance of consumer demand, Solow argues that it was the sugar industry which forged a capitalist system. Throughout this thesis, I have demonstrated how we might synthesise the two perspectives. Recognising the human predisposition for sugar is key to understanding the

[21] Marion Menzin, *The Sugar Revolution in New England,* p. 25.
[22] I am in agreement with Menzin, although, as is clear from the rest of the thesis, I argue that English domestic demand was also important.
[23] Menzin, *The Sugar Revolution in New England*, p. iv.
[24] Barbara Solow, 'Capitalism and Slavery in the Exceedingly Long Run', *The Journal of Interdisciplinary History,* 17:4 (1987) pp. 716.
[25] Barbara Solow, 'Capitalism and Slavery', p. 737.

cementation of consumer demand and to understanding more about why, as more sugar was produced, more of it was incorporated into diets with such ease. At the same time, it must be also recognised that sophisticated economic systems and trading networks were vital to facilitating the spread of the good. As a result, in this chapter, I build upon both Solow and Menzin's work by looking at how both consumer predisposition and infrastructure enabled consumption. Moreover, I bring in a specifically gendered perspective. I analyse the ways in which the economic activity of women strengthened the integration of the Caribbean and New England. I consider, in more depth, the pathways along which sugar travelled once it arrived at port and the role women played in creating them. Women were central to the circulation of the good in both formal and informal economies. I agree with Menzin that consumer demand has been underestimated in previous discussions of capitalist behaviour. Here, I frame consumption and consumer desire in terms of the labour it necessitated. Consumption, demand, and desire for sugar drove women towards labour and towards the marketplace.

In this way, I also build upon the work of James McWilliams who has demonstrated the importance of local infrastructure to the integration of New England into the transatlantic economy.[26] McWilliams contends that the macro-economic focus on imports and exports obfuscates the importance of the 'men and women who made local decisions on the ground, on their farms, in their shops, and behind closed doors'. It was these local men and women who became the 'economy's hidden engine of economic growth' and it was 'local trade that fostered economic and infrastructural stability that launched the region into international markets'.[27] While McWilliams looks at the ways in which local trade supported the leap out into the Atlantic world, and indeed looks at how women's economic activity facilitated such a bound, here I argue for the importance of local infrastructure for the reception and consumption of the imported good.

[26] James McWilliams, 'Butter, Milk and a "Spare Ribb"' and *Building the Bay Colony: Local Economy and Culture in Early Massachusetts* (Charlottesville VA, UVA Press, 2007).
[27] James McWilliams, *Building the Bay Colony,* pp. 3, 104.

Section II Geography, Source Material, and Chronology

I.i Geography

Image I John Seller, *A Map of New England* (London, 1675)

In order to think about the role of sugar in the early North American economy in the space of a doctoral thesis, it is necessary to have a strict geographical focus. In the previous chapter, I demonstrated just how pervasive sugar was across much of British North America and calculated an approximate figure for *per capita* consumption across all the colonies. Here, my focus is much narrower – on New England alone. More specifically, I centre on the area surrounding Boston and what was the Massachusetts Bay Colony from 1628-1691.

The reasons for this are manifold. Early New England was home to a burgeoning mercantile community and, as discussed by Menzin, had strong links with Barbados. Indeed, the two colonies were intertwined. Menzin gives the example of John Hull, a Massachusetts goldsmith, mintmaster, and merchant, who marked in his diary in 1659 that ‘we received

intelligence of the great fyre in Barbados…lost wherin about two hundred dwelling houses 85 storehouses were Consumed and & great stores together with them. Sundry in New England had a share in that Loss'.[28] The local impact of the destruction on a far-away island demonstrates just how united the colonies were by the mid-century. Almost all of the major families in New England had interests in Barbados and numerous people, money, goods and beliefs flowed between the two colonies during the second half of the seventeenth century. For example, two of John Winthrop's sons, Henry and Samuel, settled as planters in the West Indies. Another two sons, Adam and Simon became merchants with extensive dealings with the Caribbean Islands. It was not only the most elite families who forged these links. Later in this chapter, I look in more detail at the White family. Paul White was a 'marrinor' who ran a victualling business in Boston as well as owning land in Barbados.[29]

The imperial policy of the English encouraged this connection. The Navigation Act of 1651 forbade Barbadians to trade with their longstanding merchant partners, the Dutch. Planters were in need of new trading partners who would supply them with supplies in exchange for sugar. New Englanders seized the opportunity. By 1660, New England was 'the Key of the Indies, without which Jamaica, Barbados, & the Carybee Islands are not able to subsist'.[30] According to Menzin, by the 1670s, 'New England ships accounted for almost half of the trade with the West Indies, with the majority of New England ships originating in Boston'. She adds that between 1678 and 1684, more ships arrived in Nevis, St. Christopher, and Montserrat from Boston (77 ships) than from London (64 ships). (Thought it must be noted that English ships were bigger proportionally). By the 1680s, over half of ships entering and leaving Boston were engaged in trade with the West Indies.[31]

[28] Menzin, *The Sugar Revolution in New England*, p. 123 and John Hull Papers, 1624-1685, MSS Octavo Volumes H, American Antiquarian Society, Worcester, MA.
[29] Dow, *Probate Records*, Vol. III, p. 329 and John J. Currier, *'Ould Newbury': Historical and Biographical Sketches* (Boston, Damrell and Upham, 1896) p. 177.
[30] 'Captain Thomas Breedon to the Council for Foreign Plantations, March 11, 1661' in *Collections of the New York Historical Society for the Year 1869* (New York, New York Historical Society, 1870) p. 18.
[31] Menzin, *The Sugar Revolution in New England*, p.119. As discussed briefly in the previous chapter, the volume of trade arriving from the West Indian islands (both legally from English colonies, and smuggled from other European islands) caused upset amongst English officials and sowed the seeds of distrust between New England and English authorities. See also Mimi Goodall, 'The Rise of the Sugar Trade and Sugar Consumption in Early British America, 1650–1720' *Historical Research*, 93:262 (2020).

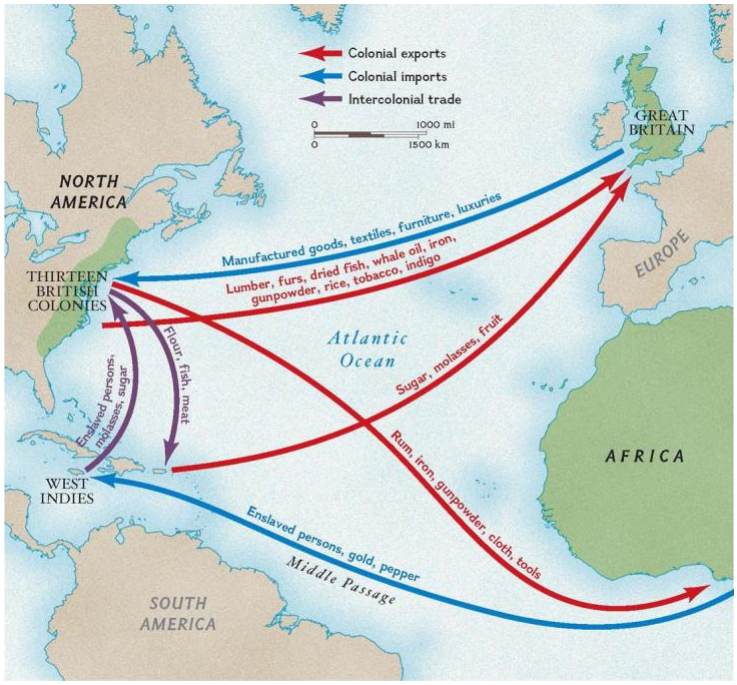

Image II Map of 17th century trade flows around the Atlantic Ocean, *The Making of America* (National Geographic, 2002)[32]

This chapter, therefore, asks for a re-orientation of the geography of New England and Caribbean trade. In *Image II*, there are two purple arrows which link British North America and the Caribbean. The trade in raw materials southwards, indicated by the downwards facing arrow, has been the focus of much of the scholarship on the relationship between two colonies relegating North American merchants to merely service providers, skilled, as Simon Smith has put it, 'principally in the art of fetching and carrying'. [33] Here, rather than look at the arrow which travels southwards, here we look at the northwards facing arrow and explore the way in which importing sugar from Caribbean plantations affected the New England economic environment. For Smith, the traditional historiography disguises the role that North American merchants played in creating and maintaining the plantation system in the Caribbean. By looking northwards, I contend that the conventional literature has also neglected to understand British North Americans as consumers. Rather than looking solely at the merchants, I look at the economic actors who brought sugar into the domestic sphere.

[32] The map neglects to label that fish and timber also were shipped southwards to the Caribbean plantations.
[33] Simon Smith, *Slavery, Family and Gentry Capitalism in the British Atlantic: The World of the Lascelles, 1648*-1834 (Cambridge, Cambridge University Press, 2006) p. 21.

II.ii. Source Material

Additional reasons for focussing on New England are the plethora of records and the abundance of source material available on the colony. Such records enable us to draw a distinct picture of how sugar was traded and consumed. I use three specific sets of sources here. Firstly, the litigious nature of the early Bay Colony means that there is a wealth of legal records which serve to illuminate the nature of the domestic economy. I draw upon the Essex County Quarterly Court records from 1636 – 1686.[34] The records have been used extensively already to document the nature of women's day-to-day lives, but they have not yet been used to investigate domestic trade in sugar.[35] The limitations of these records for detailing the women's importance to the wider economy have been noted but here, I read the sources optimistically.[36] The court records are useful for examining the structure of the domestic economy, partly by demonstrating just how transatlantic this economy was. Throughout the proceedings, we see how prevalent sugar was within women's economic sphere, and how *normal* it was. We see the ways in which women traded, exchanged, worked with, and consumed the good. The records reveal the role women played in developing the complex infrastructure of the transatlantic economy as early as the mid-seventeenth century.

I also turn to a selection of grocers' account books. Such sources are valuable for demonstrating just how formative women's trade was for the links between the Caribbean New England. I use the books to examine how women's work encouraged and facilitated the reception of sugar into the domestic economy once it had been brought northwards by the merchants. McWilliams also turns to a small sample of merchant and grocers' account books, including that of Robert Gibbs and his wife Elizabeth, whose transactions with Goody Gavate I described above. In 'Butter, Milk and a "Spare Ribb"', he shows how these merchants

[34] George Francis Dow (ed.), *Records and Files of the Quarterly Courts of Essex County 1636-1686*, 9 Vols. (Salem MA., Essex Institute, 1911-1975). Throughout the thesis thus far, I have referred sporadically to court cases documented in these volumes. The records for these years were collated and published at the end of the nineteenth century by the Essex Historical Institute. Their printed format has made them the most accessible source during the Covid-19 pandemic.

[35] For example, C. Dallett Hemphill has analysed how the records documented gender differentiation within the colony. She argues that initially there was large overlap in men and women's work but that the genders had diverged by the end of the period (after 1670 or so). C. Dallett Hemphill, 'Women in Court: Sex-Role Differentiation in Salem Massachusetts 1636-1683', *William and Mary Quarterly*, 39:1 (1982). Below (pp. 174-176), I discuss the chronology of women's work in more detail.

[36] James McWilliams argues that historical documents which are conventionally used to explore the nature of women's work serve to illuminate 'the domestic economy and the social norms structuring it, but given their very nature, they provide scant insight into how women contributed to macro-economic transformations' and the changing ever-commercialising economy of New England. McWilliams, 'Butter, Milk and a "Spare Ribb"', p. 8.

procured foodstuffs such as butter, milk and vegetables from local women, which they would then trade for fish and timber to send south to the Caribbean plantations. Here, using some of the same account books, I look in the other direction, at the role of the northward import trade.

As specie was not readily available, most of the exchanges taking place in these books are in the form of barter. Furthermore, there are relatively few instances of high interest charges. It is these characteristics which have meant that, as sources, the books have been left by the wayside in the historiography of merchant capitalism.[37] They are an important source, however, for understanding how informal or non-commercial exchanges existed alongside a transatlantic market and indeed, how they supported this market. As Margaret Ellen Newell has argued, these account books reveal how the inhabitants of New England 'transformed the face of their frontier colony' into a varied, prosperous and commercial economy.[38] The books demonstrate the cultural receptiveness of the population to overseas imports and the ways in which this population was comprised of consumers oriented towards transatlantic markets. Such receptiveness allowed the colony to prosper. The English civil-servant Edward Randolph noted in 1676 that 'all callings and professions, and all mechanical arts and occupations thrive well .... The farmers are numerous and wealthy, live in good houses ... and make good advantage by their corn, cattle, poultry, butter and cheese'.[39] My reading of the account books accords with Newell's argument – I show that the instances of barter recorded in the account books helped spread sugar into the local consuming environment.

The third set of source material to which I turn are the probate records of Essex County, Massachusetts, from the years 1635 – 1681.[40] These records reveal how sugar was inherited and enable us to track its appearance in the inventories of the deceased.[41] This source

[37] McWilliams, *Building the Bay Colony*, p. 14.
[38] Margaret Ellen Newell, *From Dependency to Independence: Economic Revolution in Early New England* (Ithaca NY, Cornell University Press, 1998) p. 102.
[39] A. T. S. Goodrick and R. N. Toppan (eds.), *Edward Randolph Including his Letters and Official Papers from the New England, Middle and Southern Colonies in America*, 7 Vols. (Boston MA, The Prince Society, 1898-1909) Vol. II, p. 235.
[40] George Francis Dow (ed.), *The Probate Records of Essex County, Massachusetts*, 3 Vols. (Salem MA, Essex Institute, 1916-1920). These probate records are a subcategory of legal documents from Essex County. They were collated and published at the same time as the Quarterly Court Records and cover roughly the same time period.
[41] Sarah F. McMahon looked at similar documents from Middlesex County, Massachusetts which included instructions for the amount of food to be left for the deceased's widow, so as to ascertain the dietary patterns of seventeenth-century consumers in different wealth brackets. Sarah F. McMahon. 'A Comfortable Subsistence:

material is also not without its limitations. For a long time, probate records have been considered an inaccurate at worst, partial at best, way to analyse food consumption patterns.[42] Jan de Vries goes as far to say that they 'are no guide to food consumption'.[43] Inventories tended to record durable goods rather than perishable, and inherently non-durable, foodstuffs. Furthermore, as we saw in Chapter Three, sugar was frequently bought in smaller quantities and its presence in the house would not have been considered a significant asset. Consideration for the immediate needs of the remaining family members, moreover, meant that food could quite often be left out of the listed assets. The sample size of the data, therefore, is not particularly large. Nor does it capture information about the very poorest, who died without leaving assets. However, I argue, despite these limitations, that the records can be useful to establish a minimum level of consumption and they can be more revelatory about sugar consumption, and gender, than we might at first think.[44]

Essex County was supplied by the thriving port of Salem, from which residents could source imported goods. The probate records for the area from 1635 – 1681 contain 30 inventories which record sugar or molasses as part of the estate. The amount bequeathed ranges quite substantially, the smallest being recorded as 'three porringers and six pounds of sugar' worth 8s 6d in the estate of John Perkins of Ipswich, dated March 29th, 1659.[45] Larger stores appear frequently, and suggest the sugar products were intended for commercial use. The largest was the 4000 lbs found in the warehouse of Paul White of Newbury in 1679.[46] These products

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The Changing Composition of Diet in Rural New England, 1620-1840', *The William and Mary Quarterly*, 42:1 (1985) p. 60.

[42] Over the past thirty years, during which time probate inventories have been mined extensively to demonstrate consumption patterns, they have been shown to be poor sources for a definitive understanding of diet because fresh meat, dairy, and produce were less likely to show up in the records. Studies relying on these inventories underreport these fresh foods as well as any other comestibles, like sugar, which were consumed quickly. See Menzin, *The Sugar Revolution,* p. 89 and Joanne V. Bowen, *A Study of Seasonality and Subsistence* (Unpublished PhD dissertation, Brown University, 1990) pp. 108-113 and 147-149.

[43] Jan De Vries, 'Between Purchasing Power and the World of Goods: Understanding the Household Economy in Early Modern Europe' in Roy Porter and John Brewer (eds.), *Consumption and the World of Goods* (London, Routledge, 1994) p. 102.

[44] Marion Menzin demonstrates their utility by linking New England probate records to accounts with local shopkeepers. She shows that while sugar does not appear in that many wills or inventories, the deceased often had long-standing and regular accounts with local grocers, from whom they would frequently buy sugar and molasses. Menzin, *The Sugar Revolution,* pp. 167-170.

[45] Dow, *Probate Records*, Vol. II, p.284.

[46] White was listed as a 'marrinor' and had investments in Barbados but also acted as a brewer and a distiller. His links to the Caribbean gave him easy access to sugar products which he would then distil and sell as 'strong waters' to his neighbours. His warehouse also housed barrels of molasses and stores of rum, as well as distillation equipment. Dow, *Probate Records*, Vol. III, p. 329 and John J. Currier, *'Ould Newbury'*, p. 177.

would have spread further into the local community either in their original form, or transformed into rum, preserves, cakes and other sweet goods.

Of the 30 probates mentioning sugar, only two pertain to the estates of women. This is not a large number and indicates the legal status of women and their limited ability to own property in the period. However, the two women whose estates are recorded, Alice Ward and Ann Condy, provide important information on the type of women who were able to consume sugar. Both were widows, and neither was particularly wealthy. When Alice Ward died in Ipswich in 1654, her estate was valued at £37 14s 11d.[47] Although she was rich enough to have a few small luxuries ('one fether boulster' and '1 houre glass' for example), most of her belongings were given the prefix 'ould' or 'little'. Nonetheless she had also accumulated a store of sugar worth £4 3s, which would have been about 125 lbs in weight. Over ten percent of the value of her estate was located in sugar. Alice left this to her one daughter and entrusted it to guardians until the girl came of age. Ann Condy, a widow of Marblehead's inventory reads similarly.[48] She died in 1678 and left behind an estate worth a little more than Alice's at £54 14s 6d which included four gallons of molasses worth 4s 6d. Ann and Alice's inventories provide an important snapshot into the type of woman who consumed sugar in seventeenth century New England, not elite but ordinary.

II. iii. Chronology

Some of the most significant points of debate within women's and gender history in North America surround questions about the economic power of women, the gendered division of labour, and the changing perceptions of them over time. In the early years of the settlement, it has been argued that there were greater economic opportunities for women on the north American colonial periphery. John Putnam Demos put forward the argument that the novelty of the colony allowed for a more fluid social and economic system - what has been termed a 'golden age' for women. However, as Jeanne Boydston has compellingly argued, it was not so much the nature of women's work, but the perception of it, that changed. As the economy became increasingly commercialised in the eighteenth century, the perception of the value and status of women's labour fundamentally altered. Wage labour, and a move to a cash economy meant that the men's and women's spheres became increasingly separate and had a

[47] Dow, *Records and Files*, Vol. I, p. 203.
[48] Dow, *Records and Files*, Vol. III, p. 283.

quite different status. Even if women's work, especially domestic labour, remained broadly the same over this long period, the fact that men's work eventually brought in cash meant that it came to be afforded greater status.[49]

The chronological extent of this thesis, the latter half of the seventeenth century, engages therefore, with the period where women's economic activities were still perceived as having value but the ever-increasing commercial sphere was meant that this mind-set was on the cusp of change. It's particularly illuminating therefore, to explore this period of early, though far from complete, commercialisation through the lens of women's labour. My findings show how, during this fifty year period, women interacted with the transatlantic economy in only a *semi*-commercial manner. Women produced domestic surplus to trade for imported commodities, and they worked to earn sugar as a form of a wage, but they also bartered, stole, and gifted sugar. Their activities demonstrate how informal and formal economies, commercial and non-commercial existed side-by-side during this early period. Fundamentally, moreover, the informal economy facilitated the growth of the formal commercial one. By looking at women's formal *and* informal economic activity, which worked with or around their legal status as dependents, I advocate for the importance of seventeenth-century women's labour to a shift towards a globally orientated marketplace and in strengthening the roots of long-distance trade. Ironically, however, we see that women's support of the transatlantic trade helped to create a system which would eventually minimise their contributions.

In line with the rest of the thesis, this chapter also re-articulates a new chronology for the sugar trade and sugar consumption. This re-periodization is even more significant in North America, where the lack of official data has meant that the story of sugar consumption has been pushed even later. As I discussed in Chapter One, James Walvin has asserted that eating sugar took off 'almost 100 years later' in North America than it did in Britain.[50] Wendy Woloson has suggested that rising demand in Britain actually forestalled American consumption by taking sugar off the international market. North American levels of sugar

[49] Jeanne Boydston, *Home and Work*, pp. 25-27. Furthermore, the legal doctrine of couverture meant that married women's economic activity was not self-owned. Consequently, women, when they are discussed, have been fashioned as dependents rather than actors in traditional stories of economic transformation. See also: Jeanne Boydston, 'The Woman Who Wasn't There: Women's Market Labor and the Transition to Capitalism in the United States', *Journal of the Early Republic*, 16:2 (1996) p.183.
[50] James Walvin, *Sugar: The World Corrupted,* p. 202.

consumption therefore lagged behind Britain until the nineteenth century. According to Woloson, it wasn't until 1830 that sugar appeared regularly in shops and stores in the United States.[51] The findings of this chapter, along with those in Chapter Three, demonstrate that sugar was in fact pervasive in New England 150 years earlier.

Section III Women and Sugar

III.i 'I am alwaies in their mouths'

Having outlined the scope of the chapter and the literature with which it engages, I now turn to the sources themselves to explore just how women and sugar interacted in the New England economy. I split these interactions out into two distinct categories, those which are legal and those which are illegal. Looking at 'legal' activity (that is, any activity which includes sugar but does not involve breaking the law) allows us to see how sugar played a part in quotidian exchange, long-standing neighbourly relations, and local business practices. Looking at 'illegal' activity enables us to see how sugar slipped more silently through the economy, the ways in which it was desired, and the lengths ordinary people would go to consume it. Before turning to these two categories, however, I discuss the history of women's sweet tooth in a little more detail.

The connection of women and a desire for sweetness was a well-established, if sexist, trope by the seventeenth century. Contemporaries noted the black and rotting teeth of Queen Elizabeth I, who was thought to eat sugared comfits daily. They described the colour as 'a defect the English seem subject to, from their too great use of sugar'.[52] In the anonymous play, *The Honest Lawyer* published in 1616, the malevolent usurer Gripe tries to poison an innocent widow by encouraging her to add sugar to her wine, but in this case, he has replaced the harmless white powder with a toxic one. As he hands her the powder, he exhorts her to dissolve all of it in the cup with the line: 'Nay tarry, tarry: thou must have sugar to it; women love sweet things, I know'.[53] Other references like these are scattered throughout seventeenth-century literature. In another play, this time dating from the 1620s, entitled *Wine,*

[51] Wendy A. Woloson, *Refined Tastes.* p. 23.
[52] Paul Hentzner (trans. R. Bentley), *Paul Hentzner's Travels in England, During the Reign of Queen Elizabeth* (London: Edward Jeffery, 1797) p. 34.
[53] S.S., *The Honest Lawyer* (London, 1616) (Ebook facsimile accessed January 2020: https://catalog.hathitrust.org/Record/008981099)

Beere, Ale and Tobacco and satirizing English consumption habits, the character 'Sugar' boasts, with strong sexual overtones, that women are 'the best friends I have, for I am alwaies in their mouths'.[54] In her 1656 prose romance, *The Contract,* Margaret Cavendish's Viceroy perceives a group of ladies to be angry with him and therefore has sweetmeats served to the company 'knowing nothing will so soon pacify that bitter humour in ladies as sweetmeats'.[55] Such characterization of women informed the description of Tabby Hoare with which I began the chapter. Rather than being based on any empirical evidence, the representation of women as gluttonous sugar consumers, however, adds fuel to a general sense of women as lascivious creatures who suffered from uncontrollable desires.[56] Perhaps unconsciously, such a conception has bled into much of the scholarship on consumption, where women of leisure are figured as the chief consumers of sweet goods.[57] Here, I move away from this characterization. Seventeenth-century women did consume sugar, yes. But rather than focus on the stereotypes of greed, or uncontrollable gluttony, I explore the way women's labour facilitated consumption and furnished consumer demand for sugar. I look at the ways in which they paved the way for sugar to circulate within the economic and digestive systems of New England. Consumer desire needs to be synthetized with a study of economic systems. The human body's predisposition explains *why* sugar was desirable, looking at women's labour shows *how* it was accessible.

III.ii Legal Consumption of Sugar

Inheriting Sugar

One of the ways in which sugar moved legally around the economy was that it was inherited. Above, I detailed the strengths and weaknesses of drawing upon probate records to analyse

[54] James Holly Hanford (ed.), 'Wine, Beere, Ale, and Tobacco: A Seventeenth Century Interlude', *Studies in Philology*, 12:1 (1915 repr., London: John Grove, 1629) p. 25.
[55] Margaret Cavendish, *The Contract* in (Kate Lily ed.), *The Blazing World and Other Writings* (London, Penguin Classics, 1994) p. 17.
[56] The changing understanding of women's desire has been discussed in detail by historians of gender and sexuality. It is widely agreed that the stereotype of the lascivious women achieved prominence in the seventeenth century. By the eighteenth century, descriptions of women became increasingly desexualised. A result, it is argued, of a new recognition that the female orgasm was not necessary for conception. See: Ruth Perry, 'Colonising the Breast: Sexuality and Maternity in Eighteenth Century England', *Journal of the History of Sexuality*, 2:2 (1991) p. 212 and Natalie Zemon Davis, 'Women on Top', in *Society and Culture in Early Modern France* (Stanford, CA, Stanford University Press, 1975) pp. 124-151.
[57] As I discussed in the previous chapter, working-class women's consumption demands our attention, but this was not through greed. Labouring women eventually became important consumers of sugar once it had dropped sufficiently in price. Sugar was a source of cheap calories and allowed male breadwinners to be given priority when it came to consuming animal protein. (See Chapter Three p. 182.)

consumption patterns. One weakness stems from the fact that women did not frequently draw up such records; as we have seen, out of the thirty probate records which bequeath sugar, only two belonged to women. However, we can look at the records in another way and evaluate how much sugar was bequeathed to women by their male relatives. Of the 28 eight records pertaining to men's estates, 25 bequeathed their goods to a female relative – be this a wife, daughter or mother. For example, in 1656, Thomas Wickes of Salem left £1 5s worth of sugar to his wife and two daughters.[58] In 1672, Theodore Price left a hogshead of sugar to his daughter worth £7.[59] While in 1674, Ezekiel Rogers left ten gallons of molasses worth 12s to his widow Margaret.[60]

When sugar was bequeathed, the women who inherited it consumed it or made use of it by trading it for other goods or services. In some cases, the widow's allowances were spelled out in specific detail. These records often directed how much money was to be given to the widow annually, so that she might be supported. As Sarah F. McMahon has shown, such portions left to widows can help us understand how much an ordinary diet was assumed to cost.[61] Mary Woodbridge, the widow of Thomas Woodbridge of Newbury, who died intestate in 1681, managed her late husband's estate in the years following his death. She provided the courts with a record of the administration of the trust in 1695, in which she explains she spent twenty pounds a year on her and her three children's diet from 1681 – 1683.[62] Such a sum would have certainly allowed for regular purchases of sugar, which at this point could be bought for as low as 4d per pound, as well as molasses which was even cheaper.[63] Mary Woodbridge and her children also inherited two large 'parcels' of sugar from Thomas which were worth £18 10s 6d in total.

It is also useful to note from whom Mary Woodbridge bought her and children's food. Women were not only consumers of sugar, they were also instrumental to its trade. Mary's record notes that her family's diet was provided by 'Ann White'. Mrs White was the wife of

[58] Dow, *Records and Files*, Vol. I, p. 243.
[59] Dow, *Records and Files*, Vol. II, p. 266.
[60] Dow, *Records and Files*, Vol. II, p.4 16
[61] Sarah F. McMahon, 'A Comfortable Subsistence', p.60.
[62] Dow, *Probate Records*, Vol. III, p. 425.
[63] My analysis of account books from the second half of the seventeenth century shows that sugar fluctuated from 4d per pound to 10d per pound. Molasses was most often recorded using a liquid measure. Using John J. McCusker's rough calculations, a gallon of molasses weighed about 13 ¼ lbs could cost as low as 3 shillings, or 2.7d/lb. John J. McCusker, 'Weights and Measures in the Colonial Sugar Trade: The Gallon and the Pound and Their International Equivalents', *The William and Mary Quarterly*, 30:4 (1973) p. 610.

Paul White, the brewer and distiller with connections to the Caribbean who died with 4000 lbs of sugar in his warehouse, as noted above. Mary Woodbridge was their daughter. On the death of her husband, Mary and her children remained living in their own house, which was next to Ann's (their mother and grandmother). However, they paid Ann for food and drink, revealing that Ann had continued her late husband's victualling business. [64] Debts in other probate records from the same time corroborate this. Although the printed volumes of the Essex County probate records only go up until 1681, two years after Ann was widowed, five records make note of money owed to her for food and drink.[65] Ann was therefore distributing sugar throughout the community, furnishing her neighbours with food and drink. She received a license to 'keepe a house of Publicke entertainment' in June 1681, having been granted by approbation by four 'selectmen' of Newbury. These men testified for her general good character and pronounced that while running her shop, she had 'as far as wee [the selectmen] know given good content in her place and demeaned herself discretely & soberly in it, and we thinke her fitt to bee continued in the Imploymnt'.[66]

Furthermore, Ann and Paul White's victualling business further reveal the strong links between the West Indies and New England. New Englanders forged trade links southwards, and many people, or a family member, owned property in one, other or both locations. Ann's seemingly small victualling trade, providing for neighbours and relatives, had international origins. Ann participated fully in the (to borrow Barbara Solow's term) Atlantic slave-sugar complex.[67] Alongside the other goods Paul White left to her, Ann also inherited an enslaved Black man and a share in an 'estate' in Barbados. Like her husband, she would have profited from processing and selling sugar and sugared goods to her neighbours, and from the use of enslaved labour at home, as well as from the profits of a sugar plantation overseas.[68]

Selling Sugar

Like Ann White, Elizabeth Gibbs (the wife of Robert Gibbs whose account book we saw above) managed a victualling business after her husband's death. Robert Gibbs, the fourth

[64] John J. Currier, *'Ould Newbury': Historical and Biographical Sketches* (Boston: Damrell and Upham, 1896) p. 177.
[65] Dow, *Probate Records*, Vol. III, pp. 193, 316, 371, 408 & 418.
[66] Dow, *Records and Files,* Vol. VIII, p. 148.
[67] Solow, 'Capitalism and Slavery', *passim*
[68] Dow, *Probate Records*, Vol. III, p. 331.

son of Sir Henry Gibbs, had emigrated to New England from England in 1658 and become a prosperous merchant, trading extensively with Caribbean islands as well as his neighbours in the Boston area.[69] Gibbs' extant business records reveal a swift progression from general store owner to international merchant. In 1660, he married Elizabeth and the couple lived in Fort Hill, a neighbourhood to the south of the main port. Gibbs's success can be measured by the cost of his house, a mansion worth £3000 which was one of the largest and most expensive houses in colonial Boston.[70] He died in 1674 and yet his business accounts extend until 1708. Moreover, there are several hands to be found in the records, particularly the small octavo account book which identifies customers and purchases made in the store. By comparing these hands to those in other documents related to the family, Cailyn Carbonell has argued that Elizabeth Gibbs was a second hand in the volume and that she managed areas of the business both before and after her husband's death.[71] In Ann White and Elizabeth Gibbs, we see examples of what Laurel Thatcher Ulrich has termed 'deputy husbands'. In Colonial North America, these were women who shouldered some of the responsibility of the family business and took on roles that might be typically defined as male. This meant, for example, keeping account books and continuing the family business after a husband's death. 'Deputy husbands' like Ann White and Elizabeth Gibbs exemplify the elasticity of gender roles and through them, once again, we can recognise the indistinctness of home and work in the period.[72]

The Gibbs' account book is a small and scrappy daybook which would most likely have been copied into a larger, neater ledger.[73] It is a far cry from the impressive customs accounts seen in Chapter Two, and it is often difficult, sometimes impossible to decipher the spidery handwriting. Moreover, many of the accounts are crossed through, so as to indicate that they are closed and the debts are fully paid up. However, reading, quite literally, between the lines which slash out lists of credit and debit, reveals a highly detailed picture of the local and quotidian networks of exchange which characterise the early Boston economy and the role women played in them. Not only does the book reveal Elizabeth Gibbs herself play a vital

[69] J. Willard Gibbs, *Memoir of the Gibbs Family of Warwickshire, England, and United States of America* (Philadelphia: Lewis & Greene, 1879) pp. 35-36.
[70] Elliot Bostwick Davis et al., *American Painting MFA Highlights* (Boston. MFA Publications, 2003) p. 87.
[71] Cailyn Carbonell, 'Elizabeth Corwin, Her Book: Uncovering Women's Accounts from 17th-Century Salem' (Public lecture given online and hosted by the Peabody Essex Museum, 24/10/2020)
[72] Laurel Thatcher Ulrich, *Good Wives: Image and Reality in the Lives of Women in Northern New England, 1650-1750* (New York, Knopf, 1982) p. 9.
[73] Robert Gibbs Business Papers 1634-1673, MSS Octavo Vols. G, American Antiquarian Society, Worcester MA.

role in the running of her husband's business both before and after his death, but it also reveals her interactions with a number of local women who were participating in transatlantic exchange. Part of Elizabeth's role was to maintain long-standing relationships with local tradespeople, many of whom were women, including Goody Gavate, the cake maker whose work I described in the beginning of the chapter. James McWilliams has analysed the account book for the years 1674 – 1677 and found that, out of the 41 clients the family interacted with during this period, 20 were women.[74] Margaret Newell's has analysed the entire book and finds that a third of all of the Gibbs' transactions were with women.[75]

The pages of the book, in which each client's debit entry is matched with a credit entry on the mirroring page, allow us to see what the Gibbs family exchanged, with whom and for what value.[76] While the chronology of the book can be haphazard, most entries are dated and clients are long-standing. They shopped at and supplied the Gibbs' store for many years. Sugar frequently changed hands as one good among many that were exchanged. Like Goody Gavate who supplied cakes on a monthly basis to the store, 'Mrs Stevens' supplied an average of three cakes a month to the store for the year 1707/8 in exchange for more sugar as well as Indian corn, ashes and meal. In 1672, Goody Spring traded eggs, a roasting pig, butter, and a bushel of apples, turnips and took home 12lbs of sugar. Goody Severs and Goody Courser had long-standing contracts to supply milk to the Gibbs and obtained sugar in return. Alice Shafting exchanged sugar for large quantities of butter. Margaret Thompkins traded her 'homespun yarn', butter, fowls and eggs in exchange for sugar and molasses. Sometimes the entries are in a man's name, but they hint of women's labour. In 1692, John Natters paid his bill for a quart of molasses and quart of rum with butter. Similarly, David Spring paid for rum, sugar and molasses with cake and a loaf of bread, as well as beef, veal, tallow and making candles. It is likely a woman made the butter, cake and bread which these men exchanged.[77]

[74] McWilliams, 'Butter, Milk, and a "Spare Ribb"', p. 19.
[75] Newell, *From Dependency to Independence*, p. 100.
[76] The book is unnumbered and sometimes the dates are hard to follow but the examples given are dated with my best approximations.
[77] Laurel Thatcher Ulrich has described in detail the daily life of a typical New England housewife in the century spanning 1650-1750. Using her probate inventory, she reconstructs the daily activities of housewife Beatrice Plummer who died in 1676, in Newbury Massachusetts. One of Beatrice's most time-consuming tasks was to make the bread and butter which were staples in the diet of her and her family. Laurel Thatcher Ulrich, *Good Wives,* p. 21. James McWilliams has also traced female dairying in 'Butter, Milk and a "Spare Ribb"'. I discuss the importance of butter in more detail below on p. 191.

The entries in the account book demonstrate how sugar travelled from the store into the home. It was transferred in exchange for the products of women's labour. In order to obtain sugar, women milked cows, churned butter, made cakes and bread, picked apples and wove yarn. Women also specifically traded their labour for sugar. An example can be found in the account of Goody Thomas who worked as washerwoman for the Gibbs from 1685/6. She worked an average of two days a month for 19 months with a wage of one shilling a day. Part of her wages were paid in sugar. She received 12 lbs of sugar, worth 4s which amounted to 10.5% of her total salary. The Gibbs' account book reveals clearly that consumption necessitated labour. Women were not passive consumers of sugar, rather they actively engaged in labour to obtain it.

Ann White and Elizabeth Gibbs were not lone female figures in early North American retail. They were joined by numerous other women. The city of Boston mandated that to sell food or drink, retailers needed licenses. In the previous chapter, I used these licenses to demonstrate the extent of coffee houses and cook shops in the city. The licenses were also often given to women, increasingly so over the course of the century. In November 1670, Dorothy Jones, the wife of Mr Morgan Jones and Jane the wife of Bartholomew Barnard were licensed 'to keepe a house of publique entertainment for the selling of coffee & chucolatto'.[78] In April 1673 in a session where a whole slew of licenses were granted for establishments serving food and drink, women made up 28% of those licenced. 18 men were given licenses and seven women. Three of the women were widows and therefore independent economic actors.[79] The number of establishments serving food and drink in the city increased by 1690, and so did the percentage of women owners. Out of the 50 licenses granted, 42% were given to women.[80] Moreover, women did not need to own or rent a physical property in order to participate in the victualling trade. Often licenses, like those granted to Ann Puglace and Ann Holyday in 1673 were 'to sell beer out of dore'. Women were able to sell sugar and sugar-adjacent goods through itinerant and peripatetic trade.

Probate inventories, account books and the licenses granted to shopkeepers are some of the more official ways through which sugar's place in the economy was cemented. The Essex

[78] Boston City, *A Report of the Record Commissioners of the City of Boston Containing the Boston Records from 1660 to 1701* (Boston MA, Rockwell and Churchill, 1881) p. 58.
[79] Boston City, *A Report of the Record Commissioners*, p. 77.
[80] Boston City, *A Report of the Record Commissioners,* p. 204.

County Court records show that women were also conduits for the good in other, less official, more extemporary, albeit still legal, ways, forming a neighbourly community of lending and exchange in which men also contributed. In 1665, a Rebekah Symonds borrowed ingredients for a cake from a Mrs Cobbett.[81] When these exchanges were not repaid, men might go to court on behalf of their wives. For instance, in 1676, Charles Runlett collected the value of two gallons of molasses from John Kimin who had borrowed it from Runlett's wife 'about a year and a half ago'.[82] Sometimes, these records also reveal women explicitly working around the doctrine of coverture – with some control over their own economic activity. For instance, Goodwife Quilter gave her lodger Abigail Leeds some of her *own* sugar, spice and meat in exchange for Abigail's spinning. (Quilter's husband had refused to buy sugar himself and thus clearly his wife had purchased her own).[83] Similarly, Beatrice Berry had her 'owne sugar and beare' as her husband would not allow her any of his.[84] These two examples demonstrate that even when women's consumption was on the whole controlled by a husband, there were ways in which they could accumulate sugar on their own terms. Women controlled the provisioning of their kitchens, as evidenced by the expenses recorded by John Poland while he worked for Eunice Patch. The Patch estate was sequestered in 1674, and Poland brought a bill of charges to the court. He demanded payment for cutting wood and going to the mill as well as charging Eunice 2s for one day 'going to Salem for sugar' and another two trips to Ipswich for the good.[85]

This wealth of examples shows us that New England women facilitated the final stages of the sugar trade. It was their activity which enabled the flow of sugar off the boats and into homes and mouths. The examples drawn upon here, from account books, inventories and court records, are emblematic of the wider economic environment. They show how women were orientated towards and engaged with a transatlantic marketplace. Their orientation helped to disseminate sugar, and secure consumer demand for it. As Marion Menzin notes, sugar drove the first 'consumer revolution' in North America. The desirability of the good, along with increased production of it in the Caribbean, and the many ways in which women could work to obtain it, created a cycle of spending and earning which helped move the North American economy forward. Mercantile activity relied on this proactive consumer base.

[81] Dow, *Records and Files,* Vol. III, p. 244.
[82] Dow, *Records and Files*, Vol. VI, p. 210.
[83] Dow, *Records and Files,* Vol. VII, p. 269.
[84] Dow, *Records and Files,* Vol. VI, p. 297
[85] Dow, *Records and Files*, Vol. V, p. 359.

These examples also show a specific point of interface between Atlantic world markets and the domestic sphere, between a burgeoning commercial world and residual informal economic systems. Sugar was bartered for the products of domestic labour. Each of the items in the Gibbs account book, for example, was labelled with a precise value in New England money, but cash rarely changes hands. Sugar was gifted, borrowed and exchanged informally. Although the sugar industry, and the shipping and credit industries which supported it, were growing apace and becoming ever commercialised, the final stage in the sugar supply chain still relied on women's local and informal networks of exchange. This is an important paradox which points to the unique characteristics of the seventeenth century economy. Even as the community worked to consume more, and interact with international markets, the ways in which they did this retained uncommercial characteristics.

The chapter thus far has centred on the ways women worked within the boundaries of the law to consume sugar. In the next section, I turn to ways in which they gained access to the good, and disseminated it further, while engaging in illegal activity. Such an investigation is necessary to demonstrate just how desirable sugar was, and the lengths to which consumers would go in order to obtain it. Drawing on this second category of evidence makes it possible to synthesise the importance of local economic networks and the good's inherent characteristics to understand why and how it was able to reach the mouths of many consumers.

III.iii Illicit Exchange

As one might expect from court records, the Essex County Court transactions provide ample detail of the legal entanglements in which inhabitants found themselves during the second half of the seventeenth-century. These local quarter-sessions were not concerned with large scale criminal activity. The cases brought before the court were mostly petty disputes between neighbours. As we saw at the start of the chapter with the accusations against Tabby Hoare and her family, debt collection, small theft, and relatively minor acts of physical aggression make up many of the records. The court also granted licenses, approved building work and settled estates. Witnesses were often called to provide evidence to support one side or another. These testimonies can be an illuminating source for understanding the tenor and timetable of ordinary life within the community: who had transactions with whom, how servants and mistresses spent their time, who were the local gossips, who was sought when a

doctor was required and who repeatedly engaged in disorderly behaviour. The records also provide an insight into consumption patterns. As I demonstrate above, they show who inherited what and who was granted licenses to sell food and drink, and what was done when a debt of sugar was owed. They are, perhaps, most useful in describing how exchange of sugar and other commodities took place outside the bounds of the law. The records tell us about the more about the desirability of sugar and help us understand why consumers wanted to get hold of it.

In September 1644, for example, Marmaduke Barton was charged with running away from his master and pilfering while he was on the run. In one of the houses he entered to look for food, he took half a cheese and a piece of cake out of Goody Gouldsmith's house and 'ate it'.[86] Mary Bishop was convicted in March 1665 for receiving stolen goods from Sarah Roper. Roper had reportedly stolen these items from her master, Major Gennell. A large portion of the goods were foodstuffs, as Bishop was apparently afforded a 'scanty diet' by her husband. They included apple pies worth ten shillings.[87] In 1674, Hannah Hutchinson admitted to stealing some linen as well as 6 lbs of sugar and one to two pints of rum 'which she drank' from a William Blunt of Andover. She was imprisoned for the crime.[88] In September 1678, Benedict Pulcipher and his wife were charged with receiving stolen goods from their son who had taken them from his employer. These goods included sugar and wheat which Susanna Pulcipher used to make a cake which she had given back to her son.[89] We can also turn back to the example of Tabby Hoare with whom this chapter began. The apple pie she was munching upon was one in a series of baked goods she made and consumed after receiving stolen ingredients in 1678.[90]

As Sara Horrell, Jane Humphries, and Ken Sneath have shown in their analysis of the Old Bailey Records in London, the theft of desirable consumption items leaves historians with an excellent resource for understanding how goods travelled through and down a socio-economic system. [91] The authors quote *Social Trends* in order to demonstrate how useful theft is for understanding consumption preferences:

[86] Dow, *Records and Files,* Vol I, p. 20.
[87] Dow, *Records and Files,* Vol. III, pp. 244-247.
[88] Dow, *Records and Files,* Vol. V, p. 350.
[89] Dow, *Records and Files,* Vol. VII, p. 264
[90] Dow, *Records and Files,* Vol. VII, p. 50.
[91] The authors' large-scale analysis allows them to consider some of the limitations of the sources and with a significantly larger data set, have a greater sense of change over time and macro trends in consumption patterns.

‘The nature of crime may change over time. Some crime, such as burglary, may stay the same in that it involves the breaking and entering of households and theft of goods, but the type of articles stolen in a burglary will change, reflecting amongst other things fashions, technological developments, and the desirability and availability of various household goods’.[92]

Horrell, Humphries and Sneath trace how certain items became more prevalent in the records over time, for example, how theft of pewter gave way to theft of chinaware. The Old Bailey records also show that, as the years progressed, ‘iconic consumer goods’ were found to be stolen from families lower-down the social scale. Goods like coverlets, cotton stockings and linen napkins had become democratized. [93] The thefts in sugar recorded in Essex County do not follow such a narrative. The court cases, like the other source material drawn upon throughout the course of this thesis, serve to show that sugar did not follow the conventional path taken by other consumer goods which only became either cheaper, or more desirable, only over the course of the eighteenth century. Theft of sugar was commonplace in the Essex records earlier, from the mid-seventeenth century. To return to *Social Trends*, the thefts in sugar show the high availability as well as the high desirability of sugar at an early point in time. As I have argued in the previous chapters, sugar therefore needs to be extracted from the conventional historiography of the consumer revolution of the eighteenth century, and located a century earlier. It should not be seen as an exclusive luxury. Rather, it was widely available, while also highly desirable, across the socio-economic spectrum throughout the seventeenth century.

The punishments for these crimes also reveal sugar’s status as a commodity. Marmaduke Barton was pardoned, as clemency was begged for him by his master John Horne.[94] Mary Bishop and the Pulciphers were bound to good behaviour and fined a small amount.[95] It is unclear what punishment Tabby Hoare received, as she was part of larger family confederacy to traffic stolen goods, but it was certainly just a fine and not imprisonment. As mentioned, Hannah Hutchinson received a stronger punishment but this is probably because her thefts

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Most importantly they trace the injured parties’ occupations which allows them to see how goods travelled through the socio-economic scale they also were able to traces wider range of goods over a longer time frame. My analysis is more anecdotal but highlights the wide availability of sugar in seventeenth-century New England. Sara Horrell, Jane Humphries and Ken Sneath, ‘Consumption Conundrums Unravelled’, *Economic History Review*, 68:3 (2015).

[92] Office for National Statistics, *Social Trends* (2002) p. 153. Quoted in Horrell, Humphries and Sneath, ‘Consumption Conundrums’, p. 833.

[93] Horrell, Humphries, Sneath, ‘Consumption Conundrums’, *passim*.

[94] Dow, *Records and Files,* Vol I, p. 20.

[95] Dow, *Records and Files,* Vol. III, pp. 244-247, and Dow, *Records and Files,* Vol. VII, p. 55.

were much more extensive and included large items of furniture.[96] The relatively minimal penalties demanded for thefts of sugar show that the good was not a luxury item, nor one that was held in exceptionally high regard. If it had been, the justice system would have come down more heavily on the criminals. Rather, sugar was readily available (in that it was easy to steal) and was not prized highly in the eyes of the law.

While there are ways in which sugar does not follow the narrative of the stolen consumer goods found in Horrell Humphries and Sneath's analysis, the authors' framework is a useful one, particularly in that they use the court records to trace how goods travelled through informal networks of exchange after theft, and seek to answer the question of what was intrinsically desirable about certain goods that led to their being stolen. Sugar's inherent desirability – in the eyes of its consumers, if not the courts who pronounced on its theft - is absolutely fundamental to how and why it travelled both legally and illegally. The fact that sugar was stolen by servants suggests that it was not *completely* ubiquitous. It was still relatively expensive and would have been a treat to those with lower-incomes. However, the circumstances of its theft reveal more about it as a good. We see that it was easily transportable, easily sub-dividable, and had the facility to be turned quickly into other goods or dishes. These characteristics mean it was an easy and attractive good to steal, In Chapter Three (p. 125), I discussed the importance of small amounts of sugar being available for consumers to buy. Similarly, the ease with which sugar could be stolen gives us one further reason for its early and swift absorption across the socio-economic spectrum.

The psychological and physiological effects of consuming also explain why it moved around the economy so easily. As I described in the Introduction, the human body is biologically predisposed to enjoy and seek out sugar.[97] Tasting sugar has a profound effect on the brain, stimulating 'hedonic hotspots' which create a feeling of well-being. Sugar triggers such a strong reward response in the brain that people find it hard to control how much they consume. They will seek out sugary foods at the expense of those which are more nutrient-dense time and time again. Sugar's characteristics help to explain why sugar was stolen and what happened to it after the point of theft. While stolen items in the Old Bailey records often entered the second-hand, or black market – suggesting they were often stolen for their resale

[96] Dow, *Records and Files,* Vol. V, p. 350.
[97] See Introduction pp. 10-15

value - stolen sugar more often disappeared immediately into hungry mouths and stomachs. Tabby Hoare ate her pie immediately. The chance to experience the psychosomatic effects of sugar was apparently worth the risk of a run-in with the law.

Theft in sugar shows that the good was pervasive from an early period. The records which document theft and illegal consumption of sugar also serve to reveal more about the social make-up of the colony and the racial prejudice which characterized it. Not only did this trade and economic activity depend on enslaved labour in the Caribbean, the Essex court cases also demonstrate that social stratification based on skin colour was something which had spread, along with sugar, up the western edges of the Atlantic. Much work has been done already on the Black presence in Early New England and the way in which anti-Black racism was codified in the colony as a result of slavery.[98] The legal records pertaining to sugar reinforce and provide further evidence for these arguments by exposing glimpses of such a mindset amongst the white colonists. Two specific examples show the ways in which the colonists relied on and exploited the labour of enslaved people at home in New England. In 1676, George Major and his wife were convicted for stealing large amounts of food, including meat and sugar, from John Knight. James Black, Knight's enslaved servant, testified that the couple had tried to force him to make it seem that he himself had stolen the meat in order to cover for themselves. Moreover, Goodwife Major had given Black a bag at several times which he was supposed to fill with sugar and return to her.[99] The Pulcipher family, who appeared often before a judge for theft, reveal similar attitudes to enslaved black servants. It seems their presence could be used as a foil for the white colonists' misdeeds. In 1682, Benedict Pulcipher testified in defence of his son, who had been caught stealing 'wine, sugar and biscuit to the value of 36 shillings' from Stephen Cross's sloop. Pulcipher petitioned that it was Stephen Cross's enslaved man who 'did intice my child to commit that vileness'. He argued that while his son was of 'weake capacitie', the enslaved man was a 'very wicked person' who had tricked his innocent son.[100]

These two examples suggest that poorer white families and Black enslaved people worked together to obtain sugar. Class solidarity seemed to have briefly trumped a racial divide.

[98] For the most recent and comprehensive study see Wendy Warren, *New England Bound: Slavery and Colonisation in Early America* (New York, Liveright Publishing Corporation, 2016).
[99] Dow, *Records and Files,* Vol. VI, p. 255.
[100] Dow, *Records and Files,* Vol. VIII, p. 297.

However, when the cases were brought to trial, the diminished social and legal status of the two enslaved men meant that white colonists thought it possible to use them as a way of avoiding legal punishment. These two, albeit brief examples, speak to a much wider colonial mindset which became as pervasive as sugar across the Atlantic world. They point to another way in which racial difference was exploited in order to expand white people's access to sugar.

Image III Frontispiece to Hannah Wooley, *The Queene-Like Closet* (London, 1670)

Section IV Conclusions

In this chapter, we have seen how sugar was exchanged both legally and illegally by women. These exchanges drive home two clear points. Firstly, they reveal that early commercialising Atlantic markets depended on informal barter and gift economies. Secondly, they show that sugar's inherent desirability combined with the domestic labour of women allowed the good to travel along the last stages of the supply chain. Understanding the ultimate point of consumption and the effect it had on the consumer also serves to emphasise the importance of these two points. In *Image III,* the frontispiece of Hannah Wooley's *The Queene-Like Closet,* which we know was available for sale in seventeenth-century Boston, we see a housewife toiling in the kitchen.[101] She is performing the domestic tasks familiar to many women around the

[101] It was not only manuscript recipe books which crossed the oceans, clutched in the hands of immigrants and colonisers, or packed safely away in their trunks away from the moisture of the sea air. Printed recipe books made the same journey. These volumes had been growing in popularity in England from the sixteenth century, and there was widespread circulation of volumes like Hannah Wooley's *Queene-Like Closet* and Gervase Markham's *The English Huswife*. (See: Sara Pennell and Michelle DiMeo, 'Introduction', in Michelle DiMeo (ed.), *Reading and Writing Recipe Books, 1550-1800* (Manchester, Manchester University Press, 2018) p. 8. Records of book shipments into the colonies also demonstrate that there was demand for these books across the ocean. Before 1796, the year in which the first American recipe book was published, readers of recipes relied on shipments of published material from Britain. Many of these books were filled with recipes demanding sugar. For example, in 1682, the bookseller John Boulter shipped Hannah Wooley's *Queen-Like Closet* to Boston, and in 1683, John Chiswell shipped the *Works* of Gervase Markham (Worthington Chauncey Ford, *The Boston book Market, 1679-1700* (Boston, The Club of Odd Volumes, 1917) pp. 94 & 109).

Atlantic. Each section shows just how physical this labour was. The woman's arms are raised in action. She stirs, lifts, kneads, and sweats in the heat of the blazing stove. The examples drawn upon in this chapter and in Chapter Three have shown that sugar was rarely consumed raw. Instead it was transformed. It was baked into cakes, pies and breads, stirred into drinks, distilled into liquor. This transformation required work that was not necessarily commercial. Women worked in the home to transform the good from a raw commodity into delicious dishes.

Human beings do not particularly enjoy the sensation of eating sugar crystals on their own but when they are combined with other ingredients, we enjoy them much more. In particular, when sugar is combined with fat, the reward centres in the brain are doubly stimulated. There are separate areas of the brain which evaluate either the ingress of carbohydrate/sugar-based foods or fat-based foods. Both these areas release dopamine when receptors track instances of either substance. When carbohydrates and fat appear in the same food together, the two areas of the brain get activated at the same time. Resulting in what researchers called a 'supra-additive effect'. Double the amount of dopamine is released leading to a much more intense feeling of 'reward'.[102] It is this combination which makes sugary fatty foods, like cakes, much harder to resist. They are highly palatable to human beings.[103] When we look at the instances of sugar consumption in early New England, we see that sugar was often combined with fat. Importantly, it was woman created these sugary fatty concoctions. Goody Gavate and Susanna Pulcipher made cakes. Tabby Hoare's and Mary Bishop made apple pies. Women made dishes which doubly stimulated those 'hedonic hotspots'. These dishes, therefore, were an important vehicle for sugar, pulling it off the boats and into mouths.

[102] Alexandra G. Di Feliceantonio, Geraldine Coppin, Lionel Rigoux, Sharmili Edwin Thanarajah, Alain Dagher, Marc Tittgemeyer, Dana M. Small, 'Supra-Addictive Effects of Combining Fat and Carbohydrate on Food Reward', *Cell Metabolism*, 28 (2018).

[103] This has been linked to high occurrence of fat and sugar together in breast milk which feeds new-borns babies with the necessary calories and nutrients to grow at pace. Studies have shown that humans respond positively to sweet foods as the sweet taste indicates a source of energy. It is also a culturally accumulated taste-preference, many cultures tending to feed infants sweet foods. See: Introduction pp. 6-10, Alison K. Ventura and Julie A. Mennella, 'Innate and Learned Preferences for Sweet Taste During Childhood', *Current Opinion in Clinical Nutrition and Metabolic Care* 14 (2011), and J.A. Desor, Owen Maller, and Lawrence S. Greene, 'Preference for Sweet in Humans: Infants, Children, and Adults', in James M. Weiffenbach (ed.) *Taste and Development: The Genesis of Sweet Preference* (U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health. Washington, D.C.: U.S. Government Printing Office, 1977).

James McWilliams has traced how women's production of butter was important for mercantile trade in seventeenth century New England.[104] He draws on the Gibbs' account book and an equivalent book belonging to merchant-grocer George Corwin to demonstrate the importance of dairy production by women to men's shipping businesses. Women produced butter to exchange at a general store.[105] The merchant-grocers would then use the butter to supply their ships going to the Caribbean. For a later period, Joan Jensen has demonstrated the ways in butter, produced by mid-Atlantic farm women, comprised a valuable section of the export trade to the West Indies.[106] McWilliams and Jensen show that churning butter was doubly crucial to the success of the sugar trade. It supplied merchants with diet for their sailors, as well as an item to exchange in return for sugar. I add a third factor here. The act of mixing butter together with sugar (something that cooks will know requires more than a little elbow grease) when making the cakes, pies and puddings which sustained New Englanders, heightened the domestic population's appetite for sugar and made them desire even more of it.

Although this chapter is narrower in its scope than those which have come before it, it calls for a readjustment of a number of points of historiography. At its core, it argues that traditional historiography has underestimated the role of women's domestic labour in the establishment of the sugar trade. New England women worked for and with sugar. Their labour either produced goods to exchange for sugar, or transformed the good from a raw commodity into appetising fare. Women's work provided the path by which sugar could travel off the boat and into homes and mouths. Women were not passive consumers of sugar. They proactively facilitated and enabled the spread of the good into the domestic economy. Through these exchanges, we see that commercial economy still relied, in part, on local and informal exchange.

The NHC has focused on the role of enslaved labour on cotton plantations in the American South which enabled capitalism's giddy heights in the nineteenth century. Other economic

[104] James McWilliams, 'Butter, Milk, and a "Spare Ribb"', p. 79.
[105] For example, Corwin's account book reveals that within the accounts which payment in dairy, such products comprised forty-five percent of the value of payments. James McWilliams, 'Butter, Milk, and a "Spare Ribb"', p. 49.
[106] By 1796, 2.5 million pounds of butter were being exported. Three-quarters of this went to the West Indies to supply sugar plantations. Joan M Jensen, *Loosening the Bonds: Mid Atlantic Farm Women*, *1750-1850* (New Haven CT., Yale University Press, 1986) p. 80. Jensen provides an extended analysis of the butter export trade pp. 79-91.

historians have focussed more on the importance of the export trade in raw materials from British North America southwards to the West Indian plantations. This chapter re-orientates our outlook and emphasises the importance of trade in sugar northwards. By acknowledging the interdependence and the intertwined nature of the Caribbean and British North America, it argues for the role of the slave-produced good in shaping the ever-commercialising New England environment. The repetitive cycle of producing and consuming in which New England women participated, constituted, 'the first consumer revolution' in British North America. Furthermore, this revolution did not take place in the eighteenth and nineteenth centuries, as most historiography suggests, rather it was occurring by 1650. The sugar trade was not a sufficient condition for the spread of capitalism, but the familiarisation and facilitation of consumption was necessary to it.

At the same time, when women traded the products of their domestic industry for the imported commodities, they did so in informal and non-commercial ways. Therefore, through sugar, we can recognise and delineate the distinctive character of the seventeenth-century New England economy. Even as commercial transatlantic markets opened, vestiges of non-commercial forms of exchange persisted. The chapter examines the interface of the transatlantic market and informal networks of exchange. As Laurel Thatcher Ulrich explains, women's enterprise in New England was often 'informal, oral, local, petty' and, as such, it only appears 'as the merest flicker on the surface of male documents'.[107] Nevertheless the glimpses and flickers found in the sources employed by this chapter clearly demonstrate the ways in which such labour was an essential link in the supply chain of the good, without which the sugar trade could not have survived. Thatcher Ulrich, echoed by a slew of other feminist economists and historians, goes on to write that 'because women's work was essentially supportive, it was invisible'.[108] Yet women's work, where it is visible, highlights just how fungible the domestic sphere and marketplace were in seventeenth-century New England. Women's enterprise embedded the good into the homes of ordinary consumers. Traditionally, cake-making has not received much attention in narratives of macro-economic change, yet for the sugar trade and the world-wide economic systems which transformed in its wake, baking was essential.

[107] Laurel Thatcher Ulrich, *Good Wives,* p. 46.
[108] Laurel Thatcher Ulrich, *Good Wives*, p. 81.

Conclusion

It is now commonplace for twenty-first century consumers to track their consumption of sugar. As I described in the Introduction, the good has become the focus of many public health and diet initiatives. Standing in the aisles of the supermarket, we turn over items to scan the ingredient lists, or we are helped by little coloured icons telling us what percentage of our recommended daily intake the item will contain, and we make choices based on the information. We also know that sugar is 'hidden' by processed food companies, making goods more palatable as well as providing cheap volume. Sugar is ubiquitous. It is in bread, cereal, yogurt and ready meals. While this thesis has not traced the effects of sugar on the health of early consumers, there are striking parallels between the process of researching it and the act of scanning ingredient lists in a local supermarket. In both situations, the eye is trained to seek out the word and to understand its significance. Just as it is everywhere in the supermarket, I found sugar to be pervasive in the archives. Consumption of sugar was widespread from 1650 onwards. This pervasiveness, this ubiquity, this sense of 'commonness' are what drove the arguments of this thesis. Armed with such crucial information, I have been able to build a series of interlinked arguments which are concerned with the broader effects of widespread consumption and which make contributions to existing scholarly literature on slavery, capitalism, commercialisation, gender, and industrialisation.

In Chapter One, I laid out the historiography of sugar production and consumption. I demonstrated that there was room for a study which explored how sugar became an item of mass-consumption during the seventeenth century. Understanding that more sugar was being consumed earlier on (at the same time as the production boom), by a larger range of people is important for identifying the chronology of capitalism and the role of the sugar trade in its development. In the rest of the thesis, I have argued for the importance of sugar, and consumers' appetites for sugar, in creating the structural changes that proliferated through the economy during the seventeenth century, not just the eighteenth century. Voracious consumer demand for sugar changed the global economy indelibly. The remaining chapters served to expand upon this argument in more detail.

In Chapter Two, I looked at the changing nature of sugar imports and exports through England and analysed the implications of these changes for the refining industry across the

country. While some historians have underplayed the role of the sugar trade, and the sugar refining industry to English economic change, I argue that sugar became a domestic manufacture in the seventeenth century. The processing of the good was an important part of nascent industrialisation. Sugar refining had a number of backward and forward linkages and influenced the expansion of the coal, copper, coopering and grocery trades. Building on the arguments proposed by Eric Williams, and developed by Barbara Solow and Nuala Zahedieh, I demonstrated that the volume of the sugar trade was relatively small, but it was important as a precedent for economic organisation and holds parallels with the cotton trade which exploded in the eighteenth and nineteenth centuries. Sugar epitomised an economic system in which raw goods were extracted in the colonies by enslaved labour. These goods were then shipped to the metropole where they were processed via an industrial process and value-added, with merchants securing the profits.

In Chapter Three, I brought British North America into the discussion and, with new calculations for *per capita* consumption, I demonstrated just how widely available sugar and sugar products were across the British Atlantic world. My new *per capita* figures show that sugar consumption on both sides of the Atlantic was greater than has been recognised by historians thus far. I supported these broad-brush national figures with an extensive amount of new, or under-examined, source material which detailed various aspects of sugar consumption. Sugar was not an inaccessible luxury. More of it was available, and more was being eaten across the socio-economic spectrum on both sides of the Atlantic before 1700.

In Chapter Four, I completed the study by looking at North America in more depth. In some ways, Chapter Four acts as a pendent to Chapter Two, as it is concerned with how sugar made its way from the port into the homes of ordinary consumers and it asked what we can learn about the economic environment by tracing this path. I looked at New England specifically, in order to analyse the nature of local trade and infrastructure, and women's involvement with it, and to understand what activities facilitated sugar's spread. I argued that traditional historiography has underestimated the role of women's domestic labour in the establishment of the sugar trade. New England women worked for and with sugar. Their labour either produced goods to exchange for sugar, or transformed the good from a raw commodity into other dishes. The chapter also shed light on the distinctive character of the seventeenth-century New England economy as it examined the interface of the transatlantic

market and informal networks of exchange. Through sugar, we see that even as commercial transatlantic markets grew in influence, forms of non-commercial exchange remained.

Drawing on an extensive range of historiography, this thesis has further demonstrated the potential of the study of the early Caribbean sugar trade and its role as a driver of change in the Atlantic economy. The chapters place sugar firmly at the centre of a nexus of early industrialisation, commercialisation, long distance trade networks, and changing consumption patterns. I conclude here with a brief discussion of where this investigation into the British Atlantic sugar trade has the potential to extend.

Jerimiah Green's Account Book

The archives at the Massachusetts Historical Society are home to a large and imposing ledger dating from around 1729. Thought to belong to Boston resident Jerimiah Green, it records the business accounts of a rum distillery in the town. The volume is an immaculate and meticulous example of double entry book-keeping. Green traded in molasses, sugar and other sundry goods in exchange for rum. The book reveals multitudes about the nature and extent of the sugar trade in New England by the mid-eighteenth century. I turn to some of its entries to discuss the avenues which a more extensive study of sugar could follow.

Tracing the development of trade in and consumption of sugar across the Atlantic Ocean was an ambitious choice for a thesis topic. The geography is vast, and the industry complicated, and the source material extensive. Across these four chapters, I have pulled out themes and ideas which were best supported by my primary source investigations. The arguments lean heavily towards the English story. Sugar had helped to transform the English economy by 1700, and it continued to do so with pace during the following century. Green's account book, however, shows us some of the ways in which the scales of argument could be balanced towards the North American side. Chapters Three and Four discuss only a few of the ways in which sugar was foundational to the North American economic world. There is greater scope for investigating how good transformed the North American economy and the western fringes of the Atlantic world.

As in England, sugar was central to consumerism and industrialization in North America. In Chapter Three, I emphasised that molasses was a key point of difference between England

and North America. Americans consumed far more of the sticky by-product of refining and they sourced it from other European plantations in the Caribbean. Molasses is the main ingredient in rum production and there is great scope to investigate rum distilling in more depth. Was Green's distillery and others like it an example of early industrialization in the same way the refineries were in England? The account book suggests it might have been. Rum distilling was a heat-intensive industry and Green used coal as fuel.[1]

The English mercantilist tariff system encouraged the domestic refining industry in the British Isles, making it cheaper to import unrefined sugar and more profitable to export domestically refined white sugar. This changed the economic and industrial landscape of England irrevocably. The Navigation Acts, however, also deliberately hindered industrial activity in both the Caribbean and the North American colonies. The subsidies given to domestic English refiners, were not extended to those in the colonies. Scholarship thus far has focused on the upset this caused among the planters in the Caribbean, who complained about the damage the taxation policy did to their profits.[2] However, the Acts also changed the economic and political landscape of North America. We know that British North Americans instead smuggled in sugar and molasses via other European ships, which did not impede their colonial industry in the same way. It's quite possible, however, that such taxation policies meant that North Americans turned to rum distillation as an equivalent domestic industry. There is also the possibility that sugar refining was more extensive in North America than has been recognised as the Green account books records payments to 'sugarhouses' as well.[3]

There is also space to look at the involvement of women in the sugar and rum trade in more detail. The ledger records Green's accounts with several women in Boston.[4] Chapter Four demonstrates the potential for women's economic activities to be considered as key parts of the integration of the sugar into the domestic economy in the seventeenth century. Women's activities need to be investigated in the eighteenth century as well. The geography of this study should reach beyond New England, including perhaps, the cakes made by renowned Rhode Island pastry chef Duchess Quamino, a former enslaved woman.

[1] Jerimiah Green Account Book, Ms. N-2424, Massachusetts Historical Society, Boston MA, pp. 40, 61, 108.
[2] See Richard Sheridan, *Sugar and Slavery*, pp. 36 – 54.
[3] Jerimiah Green Account Book, p. 4.
[4] Jerimiah Green Account Book, *passim.*

Conclusion

Like many enterprises in colonial New England, Green's Boston distillery relied upon enslaved labour and, as such, the account book also serves to demonstrate the potential for a more detailed investigation into the role of enslaved labour to early trade and industry on the North American mainland.[5] This would provide a further readjustment for the focus on nineteenth century slavery on cotton plantations in NHC literature, and once again highlight the early entanglement of sugar, slavery, capitalism, and industrialisation.

[5] Jerimiah Green Account Book, p. 75.

Appendix A: English Trade in Sugar 1663/9 and 1699-1700

		Totals			Area I: North West Europe – Germany, Holland, Flanders, France			Area II: The North – Norway, Denmark, Sweden, Russia, Poland			Area III: The South – Spain, Portugal and their islands, the Mediterranean			Area IV: British Islands – Scotland, Ireland, Channel Islands			Area V: Plantations – North America and West Indies			Area VI: East India and East Country		
		(i) London 1663/9	(ii) London 1699-1701	(iii) England 1699-1701	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii
Imports	Davis (£)	***292***	***526***	***630***							***36***						***256***	***526***	***630***			
	£000	292.71	527.17	630.52	0.02	0.05	0.05				36.38	0.62	0.71				255.93	526.42	629.68	0.38	0.09	0.09
	CWT (000)	182.72	408.58	488.65	0.01	0.02	0.02				15.32	0.38	0.42				168.25	408.15	488.18	0.14	0.03	0.03
Exports	Davis (£)			***32***																		
	£000	31.79	30.20	32.16	29.12	2.18	2.18	0.12	0.11	0.14	2.49	25.88	26.15	0.06	1.75	3.38		0.03	0.01		0.26	0.30
	CWT (000)	39.54	10.31	10.98	38.83	0.07	0.07	0.18	0.04	0.05	0.50	9.35	9.45	0.03	0.69	1.28		0.07	0.03		0.10	0.11
Re-Exports	Davis (£)		***262***	***287***		***248***	***255***		***6***	***6***		***5***	***5***		***3***	***21***						
	£000	0.0	261.86	286.54		247.33	253.58		0.36	0.37		6.03	6.24		2.93	20.79		0.71	0.99		4.50	4.57
	CWT (000)	0.0	131.66	145.46		123.95	127.47		0.20	0.20		3.53	3.73		1.48	11.27		0.30	0.57		2.19	2.22

(Source: Davis, 'English Foreign Trade', BL. Add, MS 36785 and PRO CUST 3 3-5)

Appendix B – Arriving at figure for *per capita* consumption in England: A Survey of the Current Literature

The aggregate data from 'The Book of Tables' and the 'Inspector General's Ledgers' allow a new calculation for *per capita* consumption of sugar in England. Home consumption is identified by subtracting the total exports and re-exports from the imports. These figures are an adjustment to those calculated by previous historians. Carole Shammas's calculations for *per capita* consumption in *The Pre-Industrial Consumer* are the most widely cited thus far. Her figures are undisputed, frequently employed in studies of consumption as the broad statistical framework underpinning their ideas about consumerism.[1] In this appendix, I briefly discuss her estimates.

Shammas does not use Davis' numbers from 'The Book of Tables' and the 'Inspector General's Ledgers' but instead relies on import figures in cwts provided by Richard B. Sheridan in *Sugar and Slavery: An Economic History of the British West Indies, 1623-1775*. Sheridan, in turn, draws upon John Macgregor's *A Digest of the Productive Resources, Commercial Legislation, Customs Tariffs, of All Nations. Including All British Commercial Treaties with Foreign States.*

See *Tables 1 and 2* for Shammas' *per capita* figures and Sheridan's import figures. They are included here to compare with those seen in Chapter Three.

[1] Carole Shammas. *The Pre-Industrial Consumer in England and America.* (Oxford, Clarendon Press, 1990) p.83. (Quoted in, for example, in Maxine Berg, 'Consumption in Eighteenth- and Early Nineteenth-Century Britain', in R. Floud and P. Johnson (eds), *The Cambridge Economic History of Britain, I*, *Industrialisation, 1700–1860* (Cambridge, Cambridge University Press, 2004) p. 367. Berg is quoted by Jon Stobart in *Sugar and Spice: Grocers and Groceries in provincial England, 1650-1830* (Oxford, Oxford University Press, 2013) p. 49.

Shammas's Figures

Table 1 Sugar imports for home consumption, England and Wales[2]

	1663, 1669	1690, 1698-9
Lb Per Capita Per Year	2.13	4.01

(Source: Carole Shammas, *The Pre-Industrial Consumer,* p. 82. (Richard B. Sheridan, *Sugar and Slavery: An Economic History of the West Indies 1623-75*, pp. 22, 404, 493.))

Sheridan's Figures[3]

Table 2 Sugar and Slavery *Import and Export Figures*

i. Colonial sugar imports, re-exports and retained imports, England and Wales (annual averages 000cwt)	**England and Wales, 1663**	**England and Wales, 1669**	**England and Wales, 1690**	**England and Wales, average of 1698-1700**
Imports	148	190.5	257	471.1
Re-exports				190.4
Remaining				280.7
ii. English sugar imports, re-exports and retained imports (annual averages 000cwt)	**England 1690**	**England, 1699-1701**		
Imports	257	450.8		
Re-exports	128.5	160.5		
Remaining	128.5	290.3		
iii. English sugar imports, re-exports and home consumption (000 cwt)	**England, 1699**	**England, 1700**	**England, 1701**	
Imports	427.6	489.3	435.5	
Re-exports	196.6	183	137.4	
Remaining	231	306.3	298.1	

Sources: i) Richard B. Sheridan, *Sugar and Slavery,* p.22. (British Library Add. MS 36785 / PRO CUST 318/1 f.5; 3/1-4 / John Macgregor, *Commercial Statistics,* Vol. V, p. 382.)
ii) Richard B. Sheridan, *Sugar and Slavery,* p.404. (John Macgregor, *Commercial Statistics,* Vol. V, p. 378.)[4]
iii) Richard B. Sheridan, *Sugar and Slavery,* p.493. (John Macgregor, *Commercial Statistics*, Vol V, p. 382.)

[2] Carole Shammas, *The Pre-Industrial Consumer,* p. 82.
[3] These tables often include figures stretching into the 18th century. I have only transcribed the relevant 17th century data.
[4] This is Sheridan's page reference – the table does not appear on that page in Macgregor nor on any pages surrounding it.

The purpose of reproducing Shammas' figures and her source material is to re-assess some of her conclusions. There are a number of points where her use of Sheridan's data is problematic and, furthermore, there are problems with Sheridan's own data. Firstly, it is unclear which data Shammas is averaging for her 1690, 1698-9 figures. None of Sheridan's numbers relate to these ranges of years. Moreover, when we turn to Sheridan to try and ascertain the original source for the 1690s data, the page reference he gives us for Macgregor is incorrect and no information for 1690 can be found on any of the surrounding pages. What we are left with therefore, is a *per capita* consumption figure for the 1690s which is widely cited in subsequent scholarship but whose statistical underpinning is most uncertain. We are not given the population total on which it is based. Nor do we have a precise indication of where the cwt figures come from or how they have been averaged.

At first glance, the figures from 1663 and 1669 seem to be more reliable as they come from the same Book of Tables which Zahedieh and Davis also employ. However, the errors here might actually be far more significant – especially for our story of *per capita* consumption. While Sheridan's and Macgregor's tables label the figures as being for 'England and Wales', this is actually not the case. As Davis makes very clear, the information from 'The Book of Tables' only accounts for imports into London, not the entire country. Davis even acknowledges that many have 'fallen into the trap of comparing London figures for 1663/69 with English trade figures for 1696 onward, producing absurdly distorted and exaggerated pictures of the development of English trade'.[5] Sheridan and Macgregor make this error and it therefore seems extremely plausible that Shammas – using them as sources – also fell into the trap.

Davis laments that this misunderstanding causes scholars to radically over-estimate the development of trade across these 30 or so years. The problem with Shammas' interpretation of the figures, conversely, is that of under-estimation for the earlier period. More sugar would have been coming into the country than she allows for – into ports outside of London such as Lancaster, Liverpool and Bristol – and these imports do not appear in her numbers for the 1660s. *Per capita* consumption was greater than the 2.13lb annually which she calculates for the 1660s.

[5] Davis, 'English Foreign Trade', p. 160.

Appendix C: American Commercial Statistics and arriving at a figure for *per capita* consumption

Both English and American statistics are scarce. Like Carole Shammas in *The Pre-Industrial Consumer*, I am aware that substantial comparative work cannot be done between England and America if we rely solely on national data collection. Long-run import and export figures were not created in North America until the 1770s. Nor is there a North American equivalent for Davis's discussion of seventeenth century English foreign trade. Scholars like Shammas, accept that we cannot calculate such a figure ('The year by year trend in the consumption of sugar by Americans is not known.') and therefore only begin comparing the two countries' consumption patterns as a whole in the years following 1770. [6]

There are other ways at arriving at an approximation of a figure. Drawing on the work of John J. McCusker in his published PhD thesis, *Rum and the American Revolution: The Rum Trade and the Balance of Payments of the Thirteen Continental Colonies,* and David Eltis's article 'New Estimates of Exports from Barbados and Jamaica, 1665-1701',[7] I use export figures from British Caribbean Islands which document the sugar being sent to North America. These really only begin in the 1680s and therefore there is no clear comparison for the early British statistics.[8] The figure I arrive at in Chapter Three therefore, makes a comparison between the two countries for consumption at the very beginning of the 18th century. Here, I outline in greater detail the method of arriving at such a figure and some of the pitfalls involved in making the calculations. The most significant is that the British export figures do not take smuggled molasses from other European sources into account. This is such an important point that I discuss it in the body of Chapter Three.

Unlike the ruthlessly organized and systematic customs documents from England, the archival evidence from Caribbean islands is much less orderly and more fragmented. It is mostly comprised of the Naval Office Returns lists from various islands. These were 'an itemized record of ships and their cargoes entering and leaving the colonies'.[9] These were

[6] Shammas, *The Pre-Industrial Consumer*, p. 83.
[7] David Eltis, 'New Estimates of Exports from Barbados and Jamaica, 1665-1701', *William and Mary Quarterly,* 52:4 (1995)
[8] Eltis does draw upon earlier export figures for the 1660s from two Barbados customs books. However, these figures are not useful for our discussion as they give no indication of the final destination of the exports.
[9] Eltis, 'New Estimates of Exports', p. 632.

compiled, on what was seemingly an *ad hoc* basic, by appointed officials, known as naval officers, and sent back to England. Both McCusker and Eltis use these figures for their own investigations which I summarize here before turning to the data themselves.

McCusker's thesis is a detailed investigation into whether rum was important source of credit for North America in advance of the revolution. His work is important for this study as he shows the intertwined nature of the sugar trade to both North America and England. In order to do this, he has traced the sugar imports and exports from the West Indies to and from both countries. As such, he has transcribed the export figures from all islands, and their final destination from the naval officers returns lists. One of the most frustrating aspects of these returns is that their systems of measurements are not consistent. Sugar products can be found stored in vaguely described 'bags' or in containers whose volume changes considerably over the years, such as 'hogsheads'.[10] McCusker, however, using a conversion system laid out in detail in his *Appendix C* has translated all the figures into cwt values. Consequently, for ease of comparison with Britain, I have used McCusker's numbers when calculating *per capita* consumption.

Eltis, looking only at Jamaica and Barbados, uses two specific sets of source material, both the naval office shipping lists and two Barbadian customs books. He calculates the value of trade leaving Jamaica and Barbados in the second half of the 17th century. His aim, therefore, was not to calculate the volume of sugar leaving the islands, rather how much it was worth. He converts the original volume of goods, recorded in the source material,[11] into pounds sterling in order to trace the economic development of each island. With these calculations, he is able to demonstrate the importance of Barbados as a supplier to both the London and the North American market. He is also able to show the comparative slowness of the development of Jamaica as a supplier to the global market.

Eltis's conclusions are interesting for understanding the pace of change within the Caribbean Islands but they do not clearly discuss how much sugar was entering North American ports.[12]

[10] Eltis gives more detail about this phenomenon in 'New Estimates of Exports', p. 633.
[11] Eltis, like McCusker, writes about the difficulty of translating 17th and 18th century records of sugar products into standardised amounts. See Eltis, 'New Estimates of Exports', p. 633.
[12] Eltis does give an indication of the final destination of the total trade leaving the islands but does not split out this out into individual commodities. As such, it is not possible to work backwards from his calculations and try to arrive at a figure for the volume of sugar headed towards North America, without assuming the relationship

However the article does emphasize the usefulness of the naval office shipping lists for arriving at a figure which documents how much Caribbean sugar was imported into North America during these years. Neither McCusker nor Eltis arrive at a figure for home consumption.

British Caribbean Exports to North America

The following figures are taken from McCusker's calculations of British Caribbean exports. They show the extent of the data we have on sugar exports to North America in the last years of the seventeenth century and the beginning of the eighteenth. These represent the total amount of sugar products exported. They include refined sugar, muscovado, molasses and rum.[13]

between sugar and non-sugar goods remains constant across geographical destination. It is for this reason that I rely on McCusker's calculations.

[13] All figures come from McCusker, *Rum and the American Revolution*: Jamaica p. 143, Antigua p. 166, St Christopher p. 176, Nevis p. 183, Montserrat p. 190, Barbados p. 208. It is important to note the inclusion of rum exports in these figures. The numbers from the Inspector General's ledgers which I used to calculate English consumption do not include the good. The final *per capita* figure is not affected by this absence England were not importing substantial volumes at this point, nor did they did not export any. In the comparative discussion with which I finish Chapter Three, I discuss rum imports and consumption, see p. 178.

Table 1 Carribean Exports to North America

Island	Year	Weight (cwt)
Jamaica	1682-83	1900
	1686	3173
	1687	1176
	1688	1998
	1689	1063
	1690	4405
	1698-1699	4456
	1700	3591
	1704	4210
Antigua	1705	6005
St Christopher	1678	1560
Nevis	1678	1254
	1684	3438
	1686	1839
	1687	768
	1705	3137
Montserrat	1705	2741
Barbados	1678	5226
	1691	10515
	1697	12309
	1698	8538
	1699	7034
	1700	12113
	1703/4	6741
	1705	8233

Source: McCusker, *Rum and the American Revolution*: Jamaica p. 143, Antigua p. 166, St Christopher p. 176, Nevis p. 183, Montserrat p. 190, Barbados p. 208.

The purpose of transcribing the figures is to demonstrate the scanty nature of the data. There are very few years when we have information from all the islands together. In order to reach an approximation of total imports from which to calculate *per capita* consumption, I have chosen the year 1705 as the one where there is most overlap.[14] To this I have added the figure for 1704 from Jamaica. There will be a downward bias in the data because of the absence of information from St Christopher and some of the much smaller islands.[15] 1705 is also relatively useful for comparison as it is close enough to the 1699-1701 English figures.

Other factors to consider:

English Imports and Exports

From the Inspector General's ledgers, discussed in Chapter Two, we also know how much sugar was leaving North America to go to England and how much was leaving England to go to North America. These volumes also were factored into the calculation of home consumption. Ironically, 1705 is one of the only years missing from the ledgers. I have therefore averaged the numbers from 1704/6 to arrive at an approximate equivalent.[16] As I noted in the discussion of English imports in Chapter Two, the figure shipped into England from North America is not huge compared to the rest of the English imports. However, it is a significant portion of the sugar coming *into* North America, 45% of imports are re-exported or exported to England. As with the English export and re-export trade, the figure for this early period has not received much attention from historians. Nevertheless, unlike the English trade which was characterized by a growing volume of refined sugar demonstrating the growth of the refining industry early on in England, the North Americans were mostly shipping unrefined sugar. The first refinery in North America, that we know of, was found on Liberty Street in New York in 1689, but most did not spring up until later in the eighteenth

[14] Picking just one year is not a particularly good way of capturing long term trends or any sort of average. Wars, natural disasters, weather all made shipments fluctuate from year to year. It is hard to define any one year as representative of the norm. As such, my calculations from 1705 provide just a small snapshot of what sugar consumption could have looked like during this wider time period.
[15] These include much smaller English territories like Grenada and Bermuda. The lack of data from St Christopher is more significant that these smaller islands, none of which were substantial sugar producers. See McCusker, *Rum and the American Revolution,* p. 175.
[16] PRO CUST 3/8 and 3/9.

century. [17] There was a tiny amount of sugar shipped back Westwards to North America from England, an average of 65.34 cwt. This was mainly refined white sugar.

Shipping and Leakage

All of the American figures rely on export calculations. Whenever sugar exports are used as a way of estimating imports, leakage must be factored into the equation. In the seventeenth and eighteenth centuries, casks and barrels were not water tight, and sugar was not a dry good. Muscovado sugar when packed up for shipment still contained a substantial amount of crystalized molasses which would seep out of the casks. Shipments of molasses and rum would suffer the same fate. As McCusker puts it 'the loss of sugar by drainage was an accepted fact of life for the sugar producer'.[18] Leakage of course varied across different commodities and different storage systems and across time. However, McCusker decides upon an average of 10% loss across all varieties.[19] I have followed this when calculating home consumption. This means reducing the Caribbean and English exports destined for North America to 90% of their original volume, and increasing the North American exports destined for England to 110% of their original volume.

Long Hundredweights and Short Hundredweights

A further complication in calculating American *per capita* consumption is that the basic unit of weight used to measure sugar, the hundredweight (abbreviated to CWT) was not consistent. There were two versions of the measure when it was used to quantify sugar – the long and short hundredweight. The long hundredweight equalled 112 lbs and the short hundredweight, or subtle hundredweight, equalled 100 lbs. The latter was used to quantify expensive, refined goods which often came in more delicate forms, such as spices or other finely powdered commodities. The long hundredweight was used to quantify courser more robust goods. Originally sugar was considered to be a delicate and expensive enough good to fit into the short hundredweight category but by the seventeenth century it was appearing frequently enough in English ports to be measured in long hundredweights. This

[17] Paul L. Vogt *The Sugar Refining Industry in the United States* (Philadelphia, University of Pennsylvania Press, 1908) p. 6.
[18] McCusker, *Rum and the American Revolution*, p. 799.
[19] McCusker, *Rum and the American Revolution*, p. 799.

transformation should have no effect on our calculations as it occurred outside the period of time under consideration. However, the British islands did not adopt this new system along with the mainland.[20] Therefore, any of their records measure sugar in short hundredweights or 100 lbs. As such, when the Caribbean data is converted into lbs, it must be divided by 100. Conversely, when the shipments to and from America found in the English documents are converted into lbs, they must be divided by 112. The new calculations in *Table 2* of Chapter Three takes the differing forms of measurement into account.

Population Calculation

As McCusker and Shammas do, I take my population figure from the US Census Bureau's estimates.[21] These are not as lengthy or as detailed as those compiled by Wrigley and Schofield, instead they are given in averages for each decade and I use the figure from 1700. This number is at best an estimation as the authors admit that the number of African Americans documented for this period is 'undoubtedly too low'.[22] Native Americans, moreover, are not counted at all.

[20] The difference between the two systems of measurement was first noted by McCusker who uses a variety of contemporary sources which comment on this difference to consolidate his argument. McCusker, *Rum and the American Revolution*, pp. 779-782 and note p. 843.
[21] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.
[22] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2* (Washington, D.C., 1975) p. 1168.

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