Looking Outward: Refocusing Attention on London's Hinterland

(Addendum to: "London: A multi-century struggle for sustainable development in an urban environment")

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2021

Abstract

You have encountered the London case multiple times over the course of the semester. The London case sketches key episodes in the two-thousand-year history of the interactions between society and environment that have shaped the City of London and its immediate hinterlands. This addendum to the London case was written after we realized that our initial writing of the case had ignored (perhaps a little too ironically) a critical spatial invisibility that contributed significantly to London's coping capacity over multiple centuries. Namely, London's reliance on a "global hinterland" which reached extreme proportions during the height of Britain's colonial empire. At the same time, the benefits London gained through colonial extraction came at significant cost to humans and nature in other parts of the world. Given our interest in the equity dimensions of sustainable development, understanding the relationship between London's well-being and the well-being of far flung populations should be included in our discussion of London's development history. This addendum aims to remedy this lacuna by focusing on the interaction between London and its hinterland.

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Today London is recognized as a leading "World City" with the citizens of London enjoying extraordinarily high quality of life compared to global averages. The United Nation's UN-HABITAT ranks London 4th globally in its City Prosperity Index.[1] The European Commission's Quality of Life Report, notes that 90% of London's residents say they are satisfied with the city they live in.[2] In pure financial terms, London is among the top five wealthiest cities as measured by GDP (PPP-adjusted). London's vision for the 21st century is to continue to build on its success by "expanding opportunities for all its people and enterprises, achieving the highest environmental standards and quality of life and leading the world in its approach to tackling the urban challenges of the 21st century".[3]

How did London come to occupy such a prestigious place among the world's cities—a place where the city can comfortably aspire to achieve the highest quality of life for its citizens? This case history of London has thus far focused on the interactions between society and

environment within the city of London itself, with occasional reference to interactions between London and its immediate hinterland. But London's achievements as a global city in the 21st century are in many ways built on extraction of resources from elsewhere. For much the city's history, London has at least partially relied on resources acquired, often through the use of force and violence, from outside the borders of the modern United Kingdom (UK). For example, the depletion of timber from London's hinterland, led to growing reliance on timber imported from forests in the Americas and India. It is this question of the interactions between London's development history, and its 'global hinterland' that we turn to in this section.

As London grew, so too did the geographical expanse that provided London with both basic inputs for food, fuel and fiber, as well as luxury inputs such as tobacco, fur, sugar and chocolate. It is thus worth probing not only the extent to which the modern success of London as a "World City" is built on the extraction of resources from elsewhere, but also what impact the evolving city of London has had on the well-being of far-flung populations in other parts of the world.

The term 'global hinterland' was coined in the literature on urban metabolisms to describe the reliance of cities on natural resources outside their regional boundaries. Modern cities have enormous impacts on their global hinterlands, consuming between 70-80 percent of all global resources, and as such have important implications for pursuing sustainability not only within their boundaries, but at regional and global scales.[4] An analysis of global hinterlands for the city of Beer-Sheva in Israel for example, found that 94% of the cities consumption was satisfied by the city's global hinterland, with only 6% of the resources used in the city procured from within the boundaries of Israel.[5]

While many cities in the world have only recently expanded their footprint beyond regional to global hinterlands, London arguably—along with its colonial brethren—was one of the first cities to develop a truly global footprint.

During the early history of London after the Romans first established the city around AD 50, the needs of London both in terms of consumption (food, energy, water, building material) and disposal of waste were easily served by the natural environment in and around the city. Human waste was even recycled and sold to farmers as fertilizer to produce more food. However, as the population of London grew, so too did the impact of London on its hinterlands. By the early medieval period, rapid population growth put increasing demands on London's regional hinterlands for provision of inputs into the city and as a depository for waste. For example, during this period, the geography of London's food supply expanded from the immediate surroundings to a network of farms extending 65-100km into London's hinterland. As London's population grew in the late medieval period, the regional hinterland was also depleted and the city's consumption of natural resources outpaced the capacity of the regional hinterland as a source of inputs. By the beginning of the 14th century, London experienced chronic food shortages and malnutrition. The conversion of forests into farm land, also decreased the availability of timber for construction.

By the colonial period (beginning in waning years of the 16th century and ramping up significantly in the 17th, 18th and 19th centuries), London expanded its hinterland to a global scale. In Beinart and Hughes' *Environment and Empire*, the authors look at the remarkable amount of both physical space, resources, and labor it took to fuel European consumption.

> *British and other European consumers and manufacturers sucked in resources that were gathered, hunted, fished, mined, and farmed in a great profusion of the extractive and agrarian systems: sugar form the Caribbean, furs and cod from North America, ivory and cocoa from Africa, spices and cotton, tea and timber from India; wool from the sheep of the Antipodes; rubber from South-East Asia; gold from South Africa; oil from the Middle East.* [6]

Dissecting the relationship between the city of London and its expanding global hinterland is challenging because most scholarship on colonialism is not written from the perspective of London as a city. Moreover, colonial historians have only more recently begun to focus on the impact of empire on Britain itself. As Drayton notes in the introduction to his book, even the Oxford History of the British Empire published in the 1990s, "rarely dared examine how Britain was formed by its empire over its five volumes".[7] Instead, much of modern British historical consciousness, assumes that Britain "sprang directly from its medieval insular or European cultural roots" without acknowledging the many ways in which the modern UK was shaped by its colonial legacy.[8]

While the citizens of London may not be sufficiently aware of the importance of colonialism on their own city, a strong case can be made that London, as the political, financial, and commercial heart of the British Empire, benefited as much, if not more, than any other part of the empire from its colonial exploits. A history of the city of London notes that by the 18th century, "London became the centre of the most extensive commercial and imperial network the world has ever seen, and occupied a position of seemingly unchallengeable authority".[9] So while data in this section often focuses on the UK as a whole, rather than on the city of London, it is a relatively safe assumption that London as the heart of the British Empire would have almost always felt the impacts of colonialism as much if not more than other parts of the UK.

One reason for London's place at the center of the British Empire were its successful ports and related maritime industry (recall that the cities coastal geography also made it attractive to its original Roman founders). With London at its center, British colonial success was driven at least in part by Britain's advanced maritime capabilities. In 1780, for example, Britain had almost nine hundred thousand tons of registered shipping capacity. France, its nearest rival had slightly less than seven hundred and fifty thousand tons. Other European powers had less than four hundred thousand tons (many significantly less). By 1860, Britain controlled 47 percent of the merchant shipping capacity of Europe.[10]

While British traders imported a multitude of commodities from the Americas, Africa, the Middle East and Asia, cotton perhaps more than any other commodity reshaped global trade networks and expanded British colonial power around the world. Beginning slowly in

the 1500 hundreds and ramping up over the 1600 and 1700 hundreds, Britain and her ships dominated cotton trade across three continents and several oceans. Luxury cotton cloth, woven by artisan weavers in in India, were shipped to Africa on British ships to pay local elites for slaves that were in turn shipped to the Americas to produce cotton, sugar, tobacco and other commodities which were shipped back to Britain and elsewhere in Europe for European consumption.

The plantation system in the Americas, which concentrated European capital and people in hierarchical structures relied on slaves from Africa to function. Between eleven and twelve million Africans were transported to the Americas over the period of four centuries. While the British did not originally dominate the slave trade, by the 1700s, the they had become by far the biggest carriers of slaves, transporting about 40 percent of the total number of Africans across the Atlantic.[11] Thus, the consumption of commodities in London was based on the imposition of a brutal labor regime in Africa and the Americas that caused extraordinary human misery and death.[12] This complex system of trade was dominated by private capitalism as well as privatized violence, but the exploitative trading system was possible, only because the legal and social norms of Britain did not apply in her colonies.[13]

Britain also relied heavily on other resources from its colonies. Particularly timber which had been heavily depleted in Britain was imported from British colonies including the Americas and India. By the late 1800s, Britain was importing roughly 90 percent of its timber from outside the country.[14] However, natural resources and agricultural commodities were not the only resources London acquired from its global hinterland. The city also imported important knowledge that generated significant benefits for the city and the country. Early knowledge of how to process cotton fiber into thread and then fabric—an industry that would latter bring enormous wealth to Britain—was acquired from Indian artisans.[15] Knowledge of how to inoculate against smallpox, a disease which had previously ravaged the city, was brought to London by Lady Montagu after witnessing variolation in the court of the Ottoman Empire. Even London's demands for luxury goods were often met by knowledge acquired from elsewhere. The furs traded in London required intimate local knowledge of how to find and trap beavers. This knowledge was acquired from the indigenous people in what is modern Canada and led to a profitable industry which at its peak in 1854, auctioned 500,0000 beaver pelts in London alone.[16]

The accumulation of scientific knowledge from the global hinterland was a major part of Britain's colonial venture. Aided by the spread of British military authority and private capital, British scientific networks accumulated knowledge of both the natural and social world. Indeed, Darwin's seminal theory of evolution birthed on his voyage aboard the HMS *Beagle* between 1831 and 1836, was a product of British colonial exploration.

British explorers and colonists also brought back to the metropole a wealth of cultural and historical artifacts from the farthest reaches of the empire. As historian Delbourgo puts it in his book *Collecting the World*, "[o]nly a collector at the center of an empire could draw so many things together in order to tell them apart, in an astonishing attempt to catalogue the entire world."[17] The British Empire used its power and authority to catalog and collect the worlds natural and cultural heritage. In the Kew Botanical Garden in Southwest London,

the empire amassed the largest botanical and mycological collections in the world.[18] Today, Kew Gardens remains an important global resource for plant and fungal knowledge with researchers contributing to globally important knowledge on the role of plants and fungi in our lives. But the fact that the groundbreaking research is being done in Kew Garden in London and not in the botanical gardens in Calcutta speaks to the legacies of colonialism not only on the extraction and concentration of natural resources, but also of knowledge. Plants and animals were not the only artifacts the British Empire cataloged and collected. Today, London's attraction as a major tourist destination is at least in part based on the many visitors to the British Museum every year.[*] These visitors come from around the world to see with their own eyes a world-renowned accumulation of the world's cultural heritage expropriated during the colonial period often through violence and theft from the global hinterland. Among the artifacts available one can visit at the British Museum are the Benin bronze sculptures, which were taken from West Africa in 1897 in a "punitive raid" on what is today Southern Nigeria.

While the key colonial commodities including sugar and coffee were known to Britain in the 1500s, these goods were largely curiosities or luxuries for the rich. Beginning in the 1600s, a sharp rise in incomes, followed by a steady fall in commodity prices in the 1700s, allowed middle-class Londoners to expand their consumption of sugar and other imported commodities without having to sacrifice their staple consumption. By the late 17th century, many middle-class Londoners spent part of every day in coffee houses and by 1740, the city had a total of 550 coffee houses. Demand for coffee in London led to the rising significance of coffee in the Atlantic economy not only as a crop and a beverage, but also "as a solvent for sugar".[19]

While imported commodities provided luxury goods for the middle-class, sugar began to play an increasingly important role in the lives of the poorest citizens of London as well. Sugar became a sizable component of the daily calorie intake for London's poorest laborers who whose diets were only beginning contain enough calories to sustain them through daily manual labor.[20]

Starting with the early colonial period and continuing through today, the ability to access resources from distant hinterlands—from the knowledge that allowed London to overcome smallpox, to the accumulation of resources from elsewhere—has contributed to the adaptive capacity of London and the city's ability to overcome setbacks. The total wealth of London today is difficult to estimate—it is not captured by the more commonly collected figures of income per capita or London's share of the UK's gross domestic product. This is at least in part because London's wealth including its palaces, museums, world class infrastructure, educated population and world class university system is built on wealth amassed over generations. Much of this wealth is almost certainly the result of resources accumulated during the UK's colonial history, through what the historian, Sven Beckert,

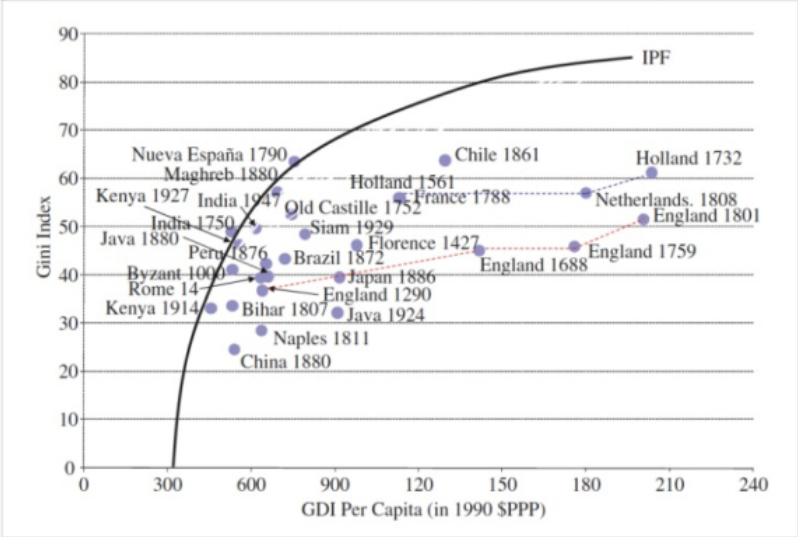
[*] The British Museum received 6.7 million visitors in FY2014/2015 and was the most popular cultural attraction in the UK for the eighth year in a row.
http://www.britishmuseum.org/about_us/news_and_press/press_releases/2015/annual_review_2015.aspx

calls “War Capitalism” defined by the “ability and willingness” of colonial Britain “to project capital and power across vast oceans”.[21]

Unfortunately, there is no comprehensive assessment of the total wealth London or even the UK gained from colonialism. But there is no doubt that Britain and in particular London benefited from colonial trade. John Marriot in his history of London, *Beyond the Tower*, makes clear the extent to which London benefited, “Britain emerged as the greatest trading nation in the world. At its heart stood London, which, enriched by commercial and imperial endeavor, had emerged as a truly global city by the end of the [eighteenth] century.”[22] The wealth that flowed through London was reflected in the value of imports and exports of the city’s maritime trade, which tripled over the eighteenth century from £4,875,538 (imports) and £5,387,787 (exports) in 1700 to £14,863,238 (imports) and £16,578,802 (exports) in 1794.[23]

An alternative way to look at the extent to which the UK benefited from colonialism is to look at the degree to which Imperial Britain extracted from its hinterland. The British Empire used power, violence and capital to create profoundly unequal economic relationships between its core and periphery. As Albert Memmi put it, in his deeply personal reflections on colonialism, “the colony sells produce and raw materials cheaply, and purchases manufactured goods at very high prices from the mother country. This singular trade is profitable to both parties only if the native works for little or nothing.”[24] Quantitative economic data from colonial economies, supports Memmi’s assessment of colonial economic relationships. By paying only subsistence wages, most British colonies extracted close to the maximum amount of wealth possible from colonial labor. Milanovic et al in analysis of pre-industrial inequality show that colonial powers often extracted close to the maximum amount possible (what they call the extraction ratio) from their colonies. In particular, Kenya and India under British colonial rule had extraction ratios approaching 100, meaning all surplus beyond the absolute minimum required for survival was captured by the ruling elite.[25]

Pre-industrial inequalities: estimated Gini coefficients, and the inequality possibility frontiers (IPF) – Milanovic, Lindert and Williamson (2008)[3]



Reproduced (thus far without permission) from Milanovic et al. 2011. *"Fig. 2. Pre-industrial Inequalities: Estimated Gini Coefficients and the Inequality Possibility Frontiers".* The Inequality Possibility Frontier shows the maximum inequality (Gini) on the vertical axis that is theoretically achievable at a given average incomes (shown on the horizontal axis) under the constraint that income of no member of society may be below a subsistence minimum.

With the end of the British Empire, the ability of London to extract resources from its hinterland through political power, force and violence, declined. In the place of colonial systems, London now relies on a more "even" playing field, of market prices and trade agreements to set the terms of trade for both its imports and exports. Nonetheless, London continues to benefit perhaps disproportionately from its hinterland. Many of the goods London consumes today are produced outside the boundaries of the United Kingdom, often in places with significantly lower costs of production due to inexpensive labor and poor environmental protections. London also continues to rely on many types or resources imported from elsewhere. Economists at University College London calculate that immigrants' to the UK have brought with them human capital in terms of their effective education and what it would have cost the UK government to educating them (had the UK government rather than the government in their country of origin) in value of 14 billion British pounds between 1995 and 2011.[26] More generally, immigration into the UK since 1995 has had positive rather than negative impacts on the country's overall fiscal health, making net positive fiscal contributions (comparing the inputs of immigrants in terms of taxes with their costs to the government in terms of social programs). This is particularly true for immigrants from other parts of the European Economic Area but especially since 2000, true for all immigrants irrespective of country of origin. A more amusing example of London's continued reliance on humans and knowledge imported from elsewhere grabbed headlines in 2016, when multiple leading UK newspapers published articles warning of the lack of available visas for "curry chefs" to prepare what has become a staple cuisine in the UK.[27]

London and the UK have also benefited disproportionately from another global resource—the capacity of the atmosphere and biosphere to absorb greenhouse gases (GHG). The UK,

at the center of the Industrial Revolution, has been burning fossil fuels at scale for longer than any other country. Despite the UKs relatively small geographical size and population compared to many modern industrial economies, the UK is responsible for the fifth largest share of historical GHG emissions, accounting for 5.8% of the cumulative total C02 emissions since 1850.[28] Economic development in the UK since the Industrial Revolution was thus greatly facilitated by the burning of fossil fuels. But if global agreements are to succeed in stabilizing greenhouse gases in the atmosphere, other cities will not have the same opportunity to store their own emissions in the biosphere.[†]

Today, London enjoys significantly higher well-being than much of the world. But any analysis of London's pursuit of sustainable development over the past centuries must reflect on the ways in which London benefited from resources acquired outside its immediate hinterland. In thinking about the lessons London's pursuit of sustainability holds for other cities, especially in the developing world, it is important to ask the extent to which these cities will have access to a similar abundance of resources for their own pursuit of sustainable development, and what resources may be available today, that were not available to London during its emergence as a global city?

London Addendum Teaching Guide:

1. How did London cope? Over the multi-century history of London, multiple setbacks such as the Great Fire in the middle 1600s and the Great Stink in the middle 1800s deteriorated the well-being of London's citizens. However, London was able to emerge from each of these setbacks and grow into a leading global city. What enabled London to emerge from these setbacks rather than stagnating or degenerating into a spiral of declining assets and well-being?

2. London, like most cities today, relies on the global hinterland to satisfy the cities needs for consumption and waste disposal (including the global commons of the atmosphere to store its carbon emissions). However, London's reliance on its global hinterland for consumption and disposal pre-dated most other cities. To what extent, did this early start as a global city provide London with an advantage that other cities lack? What types of resources that London benefited from are more scarce or costly today? What types of resources are more abundant? How is the availability of resources from elsewhere likely to affect the ability of developing cities to reach their own sustainability goals?

[†] In the 21st century, the UK transitioned from being a net exporter of coal to a net importer in 2001. By 2014, the UK imported three times as much coal as it exported. In April 2017, Britain went its first full day without using coal to generate electricity since the Industrial Revolution.

3. As London celebrates is achievements as a 'World City' in the 21st century, how should the city think about the impact of its own pursuit of sustainability on the ability of populations elsewhere to pursue their own visions of sustainability? What, if any, debt does London owe to far-flung former colonies? What does a capital assets approach tell you about how London might think about repaying its debts?

Endnotes

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