Introduction

In every grain of sugar you will find a global history of human innovation. In this chapter, I want to focus on how sugar was central to the creation of a particular technology—the international institution. While a plethora of international institutions govern all aspects of life today, in the late nineteenth century they were a novel invention. In economic terms, the question at the time was whether sugar cane growers or sugar beet growers were going to dominate the world market. In ecological terms, the question was therefore whether sugar cane would propagate more than sugar beet. Even though each type of sugar (sucrose) plant grew under very different conditions and in very different places, they both needed (and therefore competed for) significant amounts of human labour to spread their genome.

People created two new institutions—the Imperial Department of Agriculture for the West Indies and the Sugar Union—to ensure that sugar plants would continue to be transformed into a global commodity. These institutional innovations captured the attention of many scientists and economists of the late nineteenth and early twentieth century.\(^1\) This is a story about how international trade institutions were constructed by people who held various conceptions of imperialism that were linked with different understandings of the market. This is also a story about how these institutions could be understood as a rapprochement between sugar cane and sugar beet so that both could share the limited amount of human labour available.\(^2\) By telling the story this way, an account of sugar becomes an account of a particular historical moment (amongst many others) when biomass intersects with technology, within the context of the co-evolution of plants and humans. People

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\(^1\) See, for example, FW Taussig, ‘The End of Sugar Bounties’ (1903) 18 Quarterly Journal of Economics 103; E Cozens Cooke, ‘The Sugar Convention and the West Indies’ (1907) 17 The Economic Journal 315; ‘The Imperial Department of Agriculture in the West Indies’ (1899) 10 Science 699; ‘The Imperial Department of Agriculture in the West Indies’ (1911) 85 Nature 418.

Fig 35.1 Illustration from Noël Deerr, Cane sugar: a textbook on the agriculture of the sugar cane, the manufacture of cane sugar, and the analysis of sugar-house products. Published by N Rodger, London, 1921

Source: Wikimedia Commons/Public Domain.
were forming different alliances with each other, but also with different plants, when they created these institutions. While some people gained and other people lost in the economic game where humans treated each other with malice and violence, the clear ecological winners were the sugar plants.

I begin this story with how an economic and ecological crisis led to political problems for sugar cane and beet. I then examine how different ideas about free trade and imperialism informed how the British government responded to the crisis. These ideas led to the development of two new international institutions, which I examine separately. I conclude by comparing how each institution combined and put into effect a particular notion of free trade and imperialism. By focusing on the notion of law that informed these institutions, we see how each institution was like a world-making machine producing its own way of imagining and configuring empire and markets, driven by different dynamics of ecology and desire.

### The Struggle between Cane and Beet

In 1884 the price of sugar in many different places collapsed, triggering a series of global changes. The sugar crisis hit people in the islands of the British West Indies the hardest. Planting, harvesting, and processing sugar defined life there—in Jamaica today people still talk about ‘King Sugar’. The sugar crisis not only threatened life in the West Indies; some politicians in London were worried that if the West Indies unraveled politically, then their ability to govern the Empire at large would also be tested.

Countries in Continental Europe were not hit too hard since they subsidized their sugar beet industry through a complex system of excise taxes, border tariffs, and indirect benefits. In fact, West Indian plantation owners complained that Europeans caused the crisis since they were dumping cheap surplus sugar into the market, causing the price to drop unnaturally. What also frustrated the West Indians was that botanical, agricultural, and industrial innovations surrounding beet far surpassed cane because of almost nine decades of European government fiscal support. What did not help was that when disease had struck the cane and spread across the West Indies, planters lost somewhere between 25 to 50 per cent of their crops.

In the West Indies, the crisis operated within a fragile system of racist, indentured servitude. Just a couple of decades before all this there had been a labour shortage,

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4 Michele Harrison, *King Sugar: Jamaica, the Caribbean and the World Sugar Industry* (NYU Press 2001).
caused when slavery was outlawed in the British Empire in 1833 and many emancipated slaves refused to work for white planters and started their own small farms. Moreover, many white British assumed that the so-called ‘free Negro’ was limited in his ability to work hard and productively. As a result, the British government created a system of immigration that brought in indentured workers from India and China. Black workers in the islands were infuriated by the influx of cheap labour and organized protests through parliamentary debate, by creating unions, and secretly burning cane fields.

In October 1865, political disenfranchisement and economic adversity led to a revolt by the black community in Morant Bay, Jamaica. Governor Eyre declared martial law and British troops were sent in to reclaim order. The uprising was quelled through the burning of houses, and the flogging and execution of hundreds of men and women without trial. The majority of the Members of the Jamaican House Assembly feared a general ‘Negro uprising’ especially against the backdrop of Haiti’s slave revolt and independence in 1791. As a result, the Jamaican legislature passed laws granting more power to the executive. Other islands soon followed suit especially after the Confederation Riots in Barbados in 1876, marking a shift of power in the British West Indies from the colonial legislature to the Crown represented by its governor—they were now called Crown colonies.

Although the European system of sugar subsidies buffered the continent from the crisis and sugar prices stayed high, things were not all well. European consumers were angry because they had to pay so much more while the British enjoyed cheap chocolates, jams, and candies. European governments not only faced public pressure but they could no longer afford to subsidize their beet producers. Yet because the beet producers had become politically powerful over the ninety years of government support, the politicians had very little leverage to undo the system.

From sugar cane and beet's perspective things also did not look good. Sugar cane was being attacked by disease and fire and did not have a reliable source of human labour for support. And while no one was actively killing beet, it was unlikely to further receive the comforts of human government support. This meant that the beet plant would have to depend on the fluctuations of the market to determine how well its gene pool would flourish.

Response to the Crisis

In order to develop ideas about how to address the crisis in the West Indies, the British government appointed the Royal Commission on the Depression in Trade and Industry in 1886 and the West India Royal Commission in 1898, to provide reports that in effect addressed the sugar market. Joseph Chamberlain, British Secretary of State for the Colonies took the ideas developed in these reports and turned them

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5 Final Report of the Royal Commission Appointed to Inquire Into the Depression of Trade and Industry (C. 4893, 1886); Report of the West India Royal Commission (C. 8655; 8656; 8657; 8669; 8799, 1898).
into concrete policies and institutions. These reports and Chamberlain’s policies not only reflected the ideas of the time on imperialism and free trade, but also developed new ways of thinking about what we would call today global governance and global markets. These reports directly led to the creation of the Imperial Department of Agriculture for the West Indies in 1898 and the signing of the Brussels Convention (leading to the creation of the Sugar Union) in 1902.  

During this time, in the British imagination there were multiple visions of what the Empire was and should be. Even so-called ‘anti-imperialists’ of the time were not arguing for the complete undoing of the British Empire. Rather, they wanted to halt its expansion and form some sort of federation of self-governing colonies. Only a very small number of white people in Britain were calling for the actual end of Empire. So, different people wanted to institutionally and constitutionally configure the British Empire in different ways.

The same can be said for the idea of free trade; by the 1880s and 1890s free trade was almost a matter of faith in Great Britain. Most politicians, commentators, and industrialists did not question the value of free trade and people instead argued over its meaning. Through free trade debates, people in effect articulated and defended their different assumptions about what was a normal market and what was an unfair, unnatural government intervention.

Some people wanted a free trade empire that would be comprised of self-governing colonies, which would set their own tariffs only for the purpose of raising revenue; this would create a system where each colony had its own uniform tariffs for goods and do away with differential tariffs based on place of origin. This was a central idea of the Liberal Party during Gladstone’s time. Another idea was for an imperial customs union, which would mean that colonies would agree to a common revenue-only imperial tariff, which would increase a sense of imperial political integration. This idea was popular with some members of the Conservative party, but did not gain much traction. Before the sugar crisis, Chamberlain championed the idea of an imperial Zollverein which imagined free trade within the British Empire, but allowed for high, protective duties against foreign goods. After the crisis, Chamberlain proposed—through his idea of tariff reform—that Great Britain grant colonies a mix of preferences for imperial goods entering the Mother Country and protectionist duties against foreign goods.

So with that in mind, let’s see how the Imperial Department of Agriculture for the West Indies and the Sugar Union each configured imperialism and international trade markets, and what different ways people thought these new institutions related to each other.

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7 This section primarily relies on Fakhri (n 3). See also RW Beachey, The British West Indies Sugar Industry in the Late Nineteenth Century (Basil Blackwell 1957) 54; Anthony Howe, Free Trade and Liberal England 1846–1946 (Clarendon Press 1997) 204–16.

8 Howe (n 7).
The purpose of the Imperial Department of Agriculture for the West Indies was to train men who would learn how to 'produce and select true breeding types [of all potentially commodifiable plants] which will give a maximum yield, and ensure the prosperity of [these] undertakings.' This innovative institution was promoting a new approach to planting which could be called economic botany.

Not only was the institution and science new, but now farmers were finding the idea of agricultural science useful and desirable. As a result, the farmers were open to developing relationships with government-funded researchers; the same trend was starting in the US. What was even more innovative was that the Department of Agriculture was the first state institution to transcend the boundaries of all the Crown colonies in the British West Indies. At this point in time, each of these colonies had its own governor and legislature with an independent relationship to London. The Department of Agriculture in effect established a political identity of the ‘West Indies’ based on the creation and dissemination of agricultural and botanic knowledge.

The Department was in Barbados and became the hub of a network of agriculturalists who collaborated despite borders within the British Empire—in modern parlance it was a transnational institution within the Empire. It became the model for Departments of Agriculture throughout and outside of the Empire. In fact, its defining purpose can be seen in many of today’s Departments of Agriculture.

Economic botany assumed that the market was a system of inputs and outputs. According to this view, the Imperial Department of Agriculture was at the input end and therefore it was all about the plants. More specifically, it was about humans devoting significant financial, political, and intellectual resources to preserve a particular species, *Saccharum officinarum* L., otherwise known as ‘noble cane’. The Department botanists’ task was to find which strain of this particular species was the most economically productive. Botanists regularly made their methods and results of their experiments publically available to benefit sugar cane planters in the market. Over decades, John Redman Bovell who headed the Department in Barbados, had raised a total of 118,669 different seedlings. Only about three strains...
were commercially viable. Scientists and farmers had thought that ‘noble cane’ was sterile and did not seed. As a result of the 1880 crisis, botanists in the Imperial Department for Agriculture put all their energy towards breeding this one species and discovered that the plant did in fact produce seeds—economic necessity led to ecological discovery.

The Department not only served ‘noble cane’ but also the British Crown. The Department was part of a larger network which was connected together through the publically funded Kew Gardens in London. The Department was first headed by Daniel Morris, the Commissioner of the Department, and he ran it along with the Director of Kew Gardens, William Thiselton-Dyer. Kew Gardens was a botanical garden that operated like a repository or clearinghouse of imperial botanical information. It would gather and redistribute scientific knowledge throughout all parts of the Empire. Also, this network enabled botanists to move around different experimental stations in the Empire. Kew was the centre of a bureaucratic empire and the Department was the hub of the West Indies, but neither bore the cost. Each island in the West Indies had its own experimental garden funded by the local colonial government and headed by ‘local officers’ who were white men from the colonies. This structure reaffirmed class division amongst white men in the Empire; while the work of some local officers was greatly appreciated by the directors and superintendents of Kew Gardens and the Department, these local officers were limited by their social position and never received the formal accolades from the Crown like their peers in London.

The British Crown created, constituted, and ruled the British Empire through a variety of different governance structures. By governing the West Indies like a single region, the Department followed one popular notion of imperial federations akin to the federation of Canada in 1867, Australia in 1901, and South Africa in 1910. In effect, the Department could serve any model of international trade. That is to say, the form of governance did not determine the economic model; imperialism could serve almost any economic plan.

The Department’s ‘market’ was the Empire and the product was sugar cane plants and information. Its economic focus was on ‘domestic’ needs within the Empire. The Imperial Department of Agriculture was built on the notion of private property, and the vision was to create a prosperous system of small-holder farmers. It worked along two tracks that treated established economic and social relations as natural. In effect this institutionalized racial and class categories. One track would enable already existing white planters to continue growing (and selling) sugar. The other track would be to cultivate a peasantry and encourage the descendants of African slaves and indentured Indian workers to buy small plots of land and grow other exportable (less lucrative) cash crops like bananas and citrus. The idea was that this new peasantry could also continue to serve as temporary labour for the sugar plantations and for infrastructure projects.\(^\text{11}\)

\(^{11}\) This was the first time British officials considered the peasantry in the West Indies as a vital element of the economic and social system, and not as a threat to the plantation sector; see Richard A. Lobdell, ‘British Officials and the West Indian Peasantry, 1842-1938’ in Malcolm Cross and Gad Heuman (eds) Labour in the Caribbean: From Emancipation to Independence (Macmillan Caribbean 1988).
Thus, the Imperial Department of Agriculture put forward an understanding of imperialism that depended on free trade, private property, and transnational labour. The notion of a market was global in its geographic ambition, but it was a self-enclosed world of multiple states and nations unified under the Crown. While this particular way of governing focused on the space circumscribed within British imperial boundaries, I will now turn to the Sugar Union in order to provide a sense of how the British Empire was also part of another world, that of the global sugar market.

Sugar Union

The Sugar Union was created by the 1902 Brussels Convention. The Convention was primarily the result of negotiations amongst Great Britain, Germany, Austria-Hungary, and France. Whereas the Imperial Department of Agriculture’s purpose was humans serving one species of cane, this treaty was a détente between cane and beet. The treaty’s principal purpose was to discourage governments from subsidizing sugar production. It did so by allowing countries to impose countervailing duties against subsidized sugar from any country, regardless of whether the sugar originated from a non-signatory country. Since Great Britain was the largest sugar-consuming market in the world and was willing to impose countervailing duties, the treaty created an incentive for signatory and non-signatory countries to do away with their bounty system as soon as possible if they wanted access to the British market.

Like the World Trade Organization (WTO), the Brussels Convention established a permanent organizational structure. It looked like a creature of public international law but structured commercial relations in unprecedented ways. And it definitely did not look like anything in the world of international commercial law which was primarily governed through contracts.

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12 International Convention Relative to Bounties on Sugar, signed at Brussels, 5 March 1902, Cd 1535, 191 Parry 56 (Brussels Convention). The original signatories were Great Britain, Germany, Austria-Hungary (as well as Austria and Hungary in their individual capacities), Belgium, Spain, France, Italy, the Netherlands, and Sweden. Russia was present at the original negotiations but did not join until 1908. Peru joined in 1904.


14 For an example of how some in sugar related industries analysed the treaty and accordingly responded, see ‘Sugar and Fruit Preserving in Germany’ (1903) 22(114) The Chamber of Commerce Journal 248 <http://bit.ly/2fRS15r> accessed 1 October 2016.

15 For an innovative examination of the WTO, see Gregory Messenger, The Development of World Trade Organization Law: Examining Change in International Law (CUP 2016).
The Sugar Union was made up of a Permanent Commission that not only held administrative duties of collecting and publicizing information, but also functioned to resolve disputes and to ensure adherence to the agreement. The Permanent Commission was composed of delegates of the contracting states, and was aided by a Permanent Bureau that addressed matters of collecting and disseminating technical information. In effect, the Sugar Union developed its own ideas and policies.

The Convention was most ‘curious and anomalous’ for its time since its Permanent Commission exercised an unprecedented amount of power over the signatory states. One early scholar of international organizations went so far as to consider the Brussels Convention as ‘the first [agreement] to give an international committee power to dictate policy’. This power to determine policy led the few, early scholars of international organizations to portray the Brussels Convention as an exemplar for other international institutions. The few international jurists that studied this new institution considered the Sugar Union to be a new theoretical and practical way of understanding sovereignty. They pointed to the Sugar Union as an example of how sovereignty was not necessarily an exclusive exercise of absolute power over a determined territory by a single authority. To these jurists, the fact that states signed a treaty like the Brussels Convention that mediated their power and granted an international institution a great deal of decision-making ability was a foremost exercise, not a renunciation, of state sovereignty.

The Sugar Union coincided with innovations in sugar harvesting and refining technology, food production, and data gathering and processing. These advances allowed for new modes of governance through the use of statistics and monitoring. The Permanent Commission collected information from every country regarding the details of industrial output and unique systems of domestic regulation, accounting for different grades and colours of sugar. This information was thought to be necessary to calculate the amount that sugar was subsidized and the appropriate countervailing duty. It would not have been possible to establish this international system of economic management without the sugar-related innovations in statistics in the late nineteenth century.

18 See, for example, Paul S Reinsch, *Public International Unions* (1st ed, Ginn and Company 1911) 50–51; Francis B Sayre, *Experiments in International Administration* (Harpers 1919) 15–16.
20 During this time, a great number of statistical firms arose in Europe which collected data for the purpose of predicting future trends in the sugar market. Franz Otto Licht established one of the first German sugar statistical firms, which remains today as one of the most influential publishers of sugar reports and journals. FO Licht’s influential work may have been the driving force behind Germany’s suggestion that the Permanent Bureau establish a uniform system of collecting statistics. *Further Findings of the Permanent Commission Established Under Article VII of the Sugar Convention of March 5, 1902 and Further Reports of the British Delegate*, Cd 2094 (1904) 39–40.
The Brussels Convention reflected a vision of free trade and imperialism that focused on the movement of raw material from formal colonies on the peripheries to the industrialized centre of sugar refineries and sugar-using industries in North America and Europe. The debate in Great Britain over the treaty was then a matter of determining what was the natural economic habitat of commodities and configuring the appropriate institutional structure for a natural market. The concept of nature in question was not about actual plants. This was about the end of the process where the output was a uniform commodity which could be created from either the warm climates of sugar cane or colder climates of sugar beet. From the cane and beet plants’ perspective, if the humans could stabilize the sucrose market then they both would have the steady supply of human labour they needed to propagate their genomes.

The two Royal Commissions of 1886 and 1898, discussed above, capture why the Sugar Union was controversial. The commissioners found that one cause of the crisis was the European system of subsidies to the sugar beet industry. The widely held assumption in Great Britain was that a normal, natural market was one without government subsidies since subsidies destabilized the market by linking price fluctuations to the whims of government. But the commissioners, reflecting popular debate at the time, could not agree whether subsidies or countervailing duties were the more destabilizing government ‘intervention’ into the market.

In Great Britain, if you supported the Brussels Convention you thought that the only way to establish a natural sugar market was for importing governments to impose countervailing duties that neutralized the effect of subsidies on the price of sugar. In order to ensure that the appropriate amount of countervailing duties were imposed by importing countries, and that these countries did not abuse the system to block trade and protect local industries, people had to invent a new technology—an international institution—which would discipline states according to agreed upon economic principles. Also, if you were British and pro-Brussels Convention you supported a notion of imperialism in which the Mother Country owed a significant political duty to her undeveloped colonies.

The other position taken in Great Britain was that while subsidies were indeed a bad idea, misguided European governments financially supporting their own sugar producers should be left to their own devices because sugar-using industries and consumers in the Mother Country would benefit from cheap sugar (at the expense of European tax payers). Even though subsidies created an artificial price, the European governments would eventually buckle from the pressure and the market would discipline the states, thereby restoring the natural order. Those commentators and politicians who were adverse to countervailing duties, also made the point that imperialism was an expensive endeavour and so if the West Indian sugar industry failed due to market conditions, then it was the industry’s own responsibility to adapt to new market conditions. Thus, they treated colonies as autonomous and

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21 Final Report of the Royal Commission Appointed to Inquire Into the Depression of Trade and Industry (1886); Report of the West India Royal Commission (1898) (n 5).
wanted to leave it to colonial governors and legislators to work out their own economic policies.\textsuperscript{22}

The treaty, in the end, was mostly a reflection of the pro-cane/West Indies vision of free trade. But it provided a novel vision of imperialism. The Brussels Convention treated all countries’ colonial holdings as a matter of domestic concern since these holdings were not significant sugar producers. For the purposes of the treaty, however, British-controlled West Indies and Dutch-controlled Java were treated as economic sovereign entities that were separate from the Mother Country.\textsuperscript{23} Because these colonial holdings were such major global sugar producers, they were treated as political entities unto themselves that had to abide by international rules (and not intra-imperial rules). As such, Java and the West Indies were not eligible to receive subsidies from or preferential access to the Mother Country. The Brussels Convention did not significantly alter Java’s relationship to the Netherlands. The sugar producers in Java were some of the most technologically advanced in the world and provided a steady supply to Great Britain, China (via Hong Kong), Japan, and British India. When the Netherlands signed the Brussels Convention in 1902, the Javanese sugar industry was not receiving any subsidies. Whereas at this point, the islands in the British West Indies were Crown Colonies (with the exception of Barbados, which was a self-governing colony), the British Crown had a direct political hand in trying to maintain order through each islands’ governor and was considering some degree of subsidies. The Brussels Convention reconfigured this relationship, and in effect a significant portion of the British Empire, by treating each island as its own self-reliant entity for the purpose of the sugar market. In this world of the Sugar Union, the West Indies was composed of a series of autonomous islands competing in a global sugar market. From the British government’s perspective, this autonomy provided the Crown the economic stability it needed to maintain its colonial holdings.\textsuperscript{24}

\textbf{Conclusion}

In imperial terms, both the Sugar Union and the Imperial Department of Agriculture treated the West Indies as semi-autonomous entities that had a particular relationship to the Mother Country. Both institutions also deepened the British Crown’s alliance with sugar cane. In economic terms, the Sugar Union imagined the ‘global’

\textsuperscript{22} Fakhri (n 3) 57–8.  \textsuperscript{23} Art XI.  \textsuperscript{24} Fakhri (n 3) 35–6, 60–2.
market as a series of domestic units held together through the Sugar Union, and the sugar colonies of the West Indies were economic units exporting into this market. The Imperial Department of Agriculture’s economic policies focused on creating and growing productive plants with a focus on ‘local’ colonies and regional units within the Empire. To some people the Department’s approach to responding to the sugar crisis was a better option than imposing countervailing duties through a powerful international institution. To others the Department’s focus on production complemented the Sugar Union’s focus on distribution. While still others considered how both institutions maintained, and to some degree reinvigorated, the British Empire’s political power to govern overseas territories and influence other states through trade law and policy.

Regardless, the Brussels Convention was always controversial because of the debate over what constituted a government intervention into the market and the type of empire it supported. The debates over the meaning of free trade were never entirely resolved, and even today people still argue about whether subsidies or countervailing duties are worse.\(^{25}\) When the Liberal party won elections in Great Britain in 1905, they threw their lot in with sugar-using industries in the Mother Country and in effect killed the Sugar Union, changing imperial governance yet again. Even though the Sugar Union as an international trade institution looks familiar to our contemporary eyes, it was quickly forgotten.

The Imperial Department of Agriculture, however, was almost universally supported in Great Britain and became a global model for other departments of agriculture in the empire and beyond. Very few people thought that devoting a significant amount of public resources toward economically focused scientific resources was a government intervention into the market. In fact, this view is reflected in the WTO Agreement on Agriculture (the so-called Green Box).\(^{26}\)

Both institutions changed how the British Crown governed its colonies. But it remains difficult to determine why one institution was controversial but the other was not. The key to why the institutions were received differently may be that both configured the relationship between nature and the market differently. The Sugar Union was about competing notions of the natural market and it treated ecology as external to the economic market. Even today we still talk about ‘trade and environment’ as if they are separate ideas, as if trade treaties did not define ecological conditions, and environment treaties did not create patterns of trade. Trade was agnostic to ecology as long as there was a steady supply of biomass from anywhere that could be turned into a commodity; nature was to be exploited by any means to serve the market.


The Department of Agriculture, however, was concerned with managing ecology. Morris's words capture how this institution was informed by a concept of the market that was embedded in both economic nature and ecological nature:

In commercial as in natural life, the perpetual struggle for existence necessitates continual adjustment to new and fresh conditions. When this adjustment is wanting or imperfect, the industry, or being, is pushed aside and disappears.27

Morris held a popular Social Darwinist view of the world in which people, like plants, competed amongst each other for dominance. In line with this thinking, botanists were comfortable overriding default ecological evolutionary patterns with their own preferences and selecting plants to serve the market.

The Sugar Union may have been controversial because it raised an unnerving question of law since it was an international institution with unprecedented public powers that affected the private market. Leaving aside the debate of ideas over trade policy, it had challenged understandings of state power, sovereignty, and the line between public and private power. Whereas the Imperial Department of Agriculture was built upon orthodox notions of private property that fit into safe categories. It might have been that people could handle a scientific revolution, but not a legal one.

27 Quoted in Storey (n 6) 121.