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The Power Loom Puzzle

The Industrial Revolution was heralded by a flood of inventions and the accumulation of capital which, in new forms, constituted enormous power with which to produce wealth. Innovation was in the air. People were searching for new ways of producing goods at cheaper cost. The conveyor belt was born. Mass production based on the division of labour and the use of mechanical power could have raised the living standards of everybody. Sadly, for the workers, this was not to be:

> . . . without the increase in productive power that is due to industrialization the rise in real wages could not possibly have occurred. The important question is why it was so long delayed. There is no doubt at all that it was delayed; whether there was a small rise, or an actual fall, in the general level of real wages in England between (say) 1780 and 1840 leaves that issue untouched. It is the lag of wages behind industrialization which is the thing that has to be explained.[1]

Explanations for this have been partial and none have taken into account the regressive effect of land monopoly. The Marxist critique has conditioned us to believe that capital and the motives of its owners constitute the problematic area. The acquisitive greed of the capitalists is held to be responsible for large-scale poverty and deprivation.

From the outset the modern factory system has been blamed. Men had been severed from a tranquil, pastoral history and the machine was nominated as Enemy No. 1. Yet this was ironical, for the machine was as much a victim of the early years of industrial society as were the men.

The land monopolists' ability to periodically exact speculative rents—demanding a portion of *tomorrow's* higher level of output *today*—deterred new capital formation. If this hypothesis is correct, it should solve a curious mystery: why the cotton kings of Lancashire were strangely reluctant to expand their businesses by enthusiastically adopting the power loom during the first long-run trade cycle in industrial history. By untangling the webb which shrouds this phenomenon we expect to reveal the inner processes at work in the imperfectly-free market which shackled the machine and postponed the prospect of prosperity for the men who owned or worked with them.

It was over tea with some friends in a hostelry in Matlock, Derbyshire, in 1784, that the Rev. Edmund Cartwright, a country parson and Fellow of Magdalene College, Cambridge, resolved to invent a power loom which would take the backache out of weaving cotton. Hitherto, weaving had been by hand in little cellars and country cottages. But with the invention of the spinning jenny, the manufacturers from Manchester to Glasgow were producing yarn at an unprecedented rate. Output was threatening to race ahead of the capacity to turn it into cloth. This was a problem for new technology to solve, and when he returned to his home in Nottingham, Cartwright set to work on a lathe. He soon produced the first mechanical device for weaving cotton, a major technical breakthrough which promised astonishing results for the leading industry in Britain. Yet it was to be four decades before the manufacturers took up mechanical weaving on a serious scale. Why? Although more efficient than hand-weaving the apparent lack of interest in the invention was attributed by observers at that time to the competition from low-wage hand-weavers. Mr Brougham addressed his fellow Members of the House of Commons in 1817 in these terms:

> It is now found, for the first time in the history of mankind, so low are wages fallen, so great is the pressure of distress, that manual labour is making reprisals on machinery, standing a successful competition with it, beating it out of the market, and precluding the use of an engine, far from costly in itself, which saves three labourers in four. The further introduction of the power loom is actually stopped by the low rate of weavers' wages.[2]

This attempt at an explanation is unconvincing. It is true that this was a period of hunger marches and demands from the cotton weavers for a legally-enforced minimum living wage; a time when brave cavalrymen with swords drawn charged and killed defenceless protestors at Peterloo, in Manchester. But the argument is inconsistent with the timing. In 1808, one estimate put the number of factories using the power loom as only 28 or 30.[3] In 1813 there were about 2,400 power looms in the UK; in 1820 there were a mere 14,150. But then, in the next decade, the number escalated to about 55,000 in 1829.[4] Why, in the third decade of the 19th century — when wages were still low — did entrepreneurs suddenly find the power loom an attractive proposition?[5]

The cotton weavers' wages were low, but this was not due to their having to compete with machines. If anything, the higher output of machine production should have raised wages, and for this there is evidence.[6] One major reason for the level of wages was the competition from migrant Irish peasants, who could learn the weaving technique quickly and were willing to accept lower wages than Englishmen.[7]

Brougham's explanation is also unconvincing because it implies that the entrepreneurs were making sufficient profits — thanks to the low rate of wages and piece rates — to justify continued production under the existing system. This was not the case.[8] Nor does a change in consumer demand offer an explanation. If the foreign markets were restricted during the Napoleonic war, they were not much better when peace came: an impoverished Europe did not act as a significant stimulant to output in the 1820s. A minor boom in 1825 was preceded and followed by business recessions. Yet there was a marked switch to power looms during this decade.

Equally unsatisfactory is the suggestion by Halévy that the rate of take-up of power looms could have been retarded by the threats against the machines from the handweavers.[9] Weavers were no more vigorous in their protests than other groups of workers who, before or since then, believed that their livelihoods were jeopardised by the introduction of machinery; and threats from workers in agricultural or other manufacturing sectors did not deter capitalists from introducing their innovations if there was a profit to be made.

Even less plausible is Halévy's main explanation, that manufacturers would not invest in the power loom because existing capital equipment had not been exhausted. In fact, it is difficult to understand how he could have advanced this argument at all. After describing how the cotton manufacturers had readily adopted machines for spinning the yarn, he continued:

> For the weavers, however, the change involved the complete sacrifice of the old plant, in which much capital had been sunk. It was surely but natural that the forces of resistance should be much stronger in this department and that the critical period of change should be far longer and should entail far greater suffering.[10]

This suggests that Halévy did not understand the structure of the cotton industry at that time, yet on the next page he gave an adequate description of it. The yarn was spun in the factories and then bought by merchants who took it to the weavers to turn into cloth at agreed rates; the cloth was then sold back to the manufacturers for finishing (e.g., dyeing). The merchants had no large fixed capital equipment at risk, and there was no question of the weavers themselves having the power to resist technological innovation in order to preserve the capital value of the looms which they owned. Those looms, while precious to the weavers, were not as vulnerable as Halévy suggests; and their owners wielded no influence over the manufacturer, merchant or Parliament such that they could deter new capital formation by fair means or foul. Halévy must have intuitively understood this, for he fell back on the 'low wages' thesis which he believed he had rejected.[11] But he reversed the argument; instead of the machines beating down wages, and thereby making fresh capital formation unattractive, he concluded that the weavers anticipated the mechanical threat to their traditional, independent weaving process by accepting lower wages and thereby removing the incentive to use machinery.[12] This assumes that the slum-dwelling weavers had at some early stage enjoyed reasonably high wages which they could then afford to reduce, an untenable hypothesis according to the historical evidence.

The point at which the power loom would have been introduced was in the factory, alongside the established cotton spinning processes. The factory owners had no weaving machines threatened with redundancy; but they *did* have an incentive to adopt the power loom, to use up some of the surplus yarn which they were now producing. And credit from banks was available for the manufacturers in the biggest growth industry in the leading trade nation in the world.

On top of all this, there was another sound reason for a quick transformation to mechanical weaving. The price of cotton goods slid fast during the first two decades of the 19th century. Profits were squeezed, but could have been raised by the use of the new machines, which would have cut the unit costs of producing the final article. The power loom, as Mr Brougham pointed out, 'saves three labourers in four'. And inventors like Cartwright were not bashful about publicising the efficiency of their mechanical process compared with the traditional way of doing things by hand. Why, then, was investment in the power loom avoided during the formative decades of an industrial society in which innovation and enterprise constituted the motivating ethos?

The answers can be found in the evidence left by William Radcliffe, who chronicled the affairs of the cotton industry for the benefit of future historians. Radcliffe presents us with a paradox. He earned a good living out of trading, yet he was the first industrialist in the history of modern society to systematically campaign for restrictions on trade. From 1800 onwards he fought vigorously to turn public sentiment away from free international trade which, due largely to the popularity of *The Wealth of Nations*, swayed the parliamentarians who formulated national policy. Radcliffe's campaign was tragic not because he failed, but because it was misconceived. He failed to correctly identify his enemy, the landowner; so much so, that he actually ended up by siding with them and supporting their cause. In doing so, he unwittingly multiplied the problems which confronted the industry to which he devoted a lifetimes's work. Answer

Radcliffe believed that Britain should stop exporting her surplus yarn to European and North American countries, where weavers turned it into cloth which then competed with British cloth in the world's markets.[13] Mercilessly he attacked the Lancashire cotton manufacturers who indulged in what he called the 'vile traffic' which was — he believed — responsible for impoverishing both employers and workers. Convinced that he had isolated the true cause of the industry's problems, he roundly attacked 'the curse of modern political economists, and liberal (*meaning retrograde*) march of mind'.

So it came about that, by one of those curious twists of history, the first major critique of free international trade came from a man who was a leading capitalist and benefactor of *laissez faire*! Radcliffe was not pursuing this policy out of self-interest; he was not attempting to line his pockets with the profits arising from oligopolistic control over markets. He was responding to an industry-wide problem. His misdiagnosis of that problem, and the solution which appeared to commend itself, was to be the first of many more similar errors perpetrated as the industrial system evolved.

William Radcliffe was a substantial entrepreneur in his own right, but he did not fit the stereotyped image beloved by socialist critics of capitalism. He was neither inhumane towards his employees, nor constantly grasping after profits, nor self-centred to the exclusion of the interests of others. He was born on a small farm in Lancashire, where he learnt the cotton weaving trade from his father, who was a small landowner. So industrious was he that he expanded his business to the point where he was employing 1,000 weavers scattered over three counties. In the record he left the industry, he referred to the capital which he had managed to save and he confidently issued a challenge:

> I can truly say that it had not been got by 'grinding the face of the poor;' for my greatest pride was to see them comfortable; and in every transaction with them, my equals and superiors, 'I did by each, as I would they should have done to me,' and I challenge enquiry in the circle I moved in, that no fact can be found to contradict what I have said; and I give the same challenge as to any deviation from this principle to the present day.[14]

From his home in the small town of Mellor he undertook public-spirited works, such as improving the roads; his reputation grew and he was appointed to three district commissions and was destined for the magistrate's bench. But at the age of 40 he uprooted his family and moved to Stockport. The new factory system proved too strong to resist.

Radcliffe quickly established a sound business just 14 miles from Manchester, the mecca of the cotton industry. But he soon realised that cotton spinning was going to pose problems. Rather than export the industry's surplus yarn, why not develop a new process under one roof which would ensure that the yarn was woven as fast as it was spun? He talked the problem over with his partner in 1800, but it was not until the following summer that he worked out his finances and decided to act. Risking his own capital, he bought premises from Messrs. Olknow and Arkwright and set about constructing a new system with the aid of a handpicked team of workers. Radcliffe had confidence in his eventual success. He had a wager with his partner that he would prove successful within two years: he won the bet.

Radcliffe built on Cartwright's power loom inventions, and in 1803-4 he patented a dressing machine. The business soon yielded him a profit of £100 a week, and money began to roll in from the licences accorded under his patent rights. But there was no question of his trying to steal a march over his competitors in the industry, for in 1811 he set up a club with the aim of diffusing knowledge about the latest mechanical methods of cloth-making. It was one of his proud boasts that he employed more skilled men than he needed, so that some of them could go off to other factories to help manufacturers to master the latest techniques.

Radcliffe was clear about the reason why he originally undertook the risky business of invention, which could have absorbed his capital and left him penniless: the demand for mechanical weaving existed within the industry. At no point in his detailed account of these developments did he complain that entrepreneurs could not obtain bank loans for new investment. Yet despite all his efforts the diffusion of the new technology was painfully slow. Why?

The deterioration in the condition of the weavers began with the termination of what he called the golden years, from 1788 to 1803. The industry went into a decline. Profits and wages were cut back drastically. Within two decades, he recorded, the price of weaving had dropped 'from 17s. (with a profit of 10 to 20 per cent to the master,) to 4s. to the weaver (and no profit to the master!)'. With the decline in price, the employers were forced to reduce wages: '... the masters foresaw the evils this system of lowering the wages would produce, they had no choice left; as they must either go on in this way, or give up their manufacture altogether'.[15] Wages, he declared with emphasis, were *below the bread and water level.*

The power loom was popularly blamed and attacked as a threat to the employment of weavers. These were men who could hardly be expected to understand the macro-economic forces which were responsible for their pitiable condition. Radcliffe was one of the targets of protest: attempts were made to burn down his factory, and stones were thrown through the windows of his home.[16] This was the time of the Luddites, who wished to smash machines on the assumption that they created hardship rather than increased general welfare. Robert Owen, the utopian socialist, believed that he had demonstrated that mechanisation created an increasing gap between consumption and potential production: he was one of the first economic theorists to advance the under-consumption hypothesis as an explanation of economic recession. But if there was under-consumption, this could not be attributed to a lack of demand. For the workers and their families were hungry and over-worked, their homes were small and mean: there was enormous unsatisfied consumer demand. To blame the economic recession in the 1820s on 'over-production' was a perversion of reality.

Radcliffe's experience with technological innovations during his early years in Mellor convinced him that machines could not be held responsible for the plight of the weavers. 'Surely there must be some other cause for their distress, than the interference of the new system, which, in fact, has never yet interfered directly with them at all,' he asked. The new methods of spinning cotton, he pointed out, actually increased the demand for labour and boosted wages.[17] Radcliffe had no doubt about the enemy of his industry: it was that 'Foreign Anglo Junto' which conspired in Manchester to carry off the yarn to foreign lands, there to be spun cheaply and sold in competition with British cloth. By imposing a duty on such exports, he repeatedly informed the Lords and Commoners of Parliament, the British weavers would be able to recover the markets which they had lost to foreign manufacturers. Was this thesis correct?

First, he argued, foreign labour was cheap. In a memorandum to a committee of the House of Commons which he submitted on April 7, 1808, he referred to the foreign manufacturers 'whose labour might be had at half the price such labour was paid for in this country'.[18] If correct, this would have constituted an advantage to Britain's competitors, although the difference in wages would have been partly (if not wholly) offset by the cost of transporting the yarn abroad. But this is an implausible argument; Radcliffe himself had noted how the wages of English weavers were below subsistence level. Many of them lived only with the additional support of money from the poor rates.[19] So there could have been no comparative advantage on this score.

What of profits? Foreign manufacturers were not accepting lower returns than the Lancashire millowners. UK profit margins had been cut right down to the bone, and many manufacturers were eventually rendered bankrupt. Radcliffe had predicted this ruin, and had recorded the drop in yields on capital investment.[20] In a breakdown of the costs of producing a piece of calico of 28 yards length he recorded 'Other expences, including the master's profit', at 1s. in both Blackburn and Elberfeldt.[21]

There were no significant variations in the level of wages and profits, then, to explain the striking development of foreign weaving — or, to put the problem in a different way, the curious incapacity of British manufacturers to exploit their initial innovative advantage by weaving their own yarn at lower costs than their foreign competitors. So we have narrowed down the analysis to one possible explanation: UK rents were so prohibitively high that domestic manufacturers could not expand their premises and productive capacity. How much truth is there in this hypothesis?

Blindly — from the analytical viewpoint — Radcliffe failed to perceive the crucial importance of the differences in one of the costs of production. The rents paid by foreign producers were low,[22] while land values in Britain during this critical period of the industrial revolution were very high. The results of this on the cost of production were, in fact, documented by Radcliffe, who cited them for his readers when he gave a breakdown in the cost of producing 28 yards of calico.[23]

First cost of a piece of calico, 28 yards long

IN BLACKBURN			IN ELBERFELDT		
lb. oz.	s.	d.		s.	d.
2 4 of Twist, @ 15d.	2	9¾	ditto, @ 1s.	2	3
2 12 of Weft, @ 13d.	2	11¾	ditto, @ 10d.	2	3½
Paid for weaving, one part in money, and the other, more or less, as the wages ebb and flow, out of the poor's rate — non-payment of rent, and shop bills the weaver is not able to discharge; all of which is the same as money, in a national point of view	6	0	ditto	2	0
Other expenses, including the master's profit, say	1	0		1	0
	12	9½		7	6½

From this we see that the employers were left with a similar profit, and that the difference in the cost of buying twist and weft (the lower cost to foreign buyers being due to their shrewd dealing, according to Radcliffe) was a few pennies. The major difference is in the cost of labour: 4s. Now, if the weaver of Elberfeldt was paying all his living costs, including rent, out of 2s., and given that there was no significant difference in the wages of the Blackburn and Elberfeldt workers, it appears that the English weavers were paying (or having paid for them out of the poor rates) over 4s. in rent! The difference in costs between the two weaving centres is almost wholly attributable to rent. Radcliffe's data is consistent with the general economic facts of the period.

This was a time of great prosperity for the owner of land, who was favoured by the increased locational concentration of industries. The rise in rents began in the 1790s, and reached its zenith in the late years of the second decade, between 1813 and 1820.[24] Speculation was rife. Thorold Rogers condemned the land monopoly which enabled owners to exploit the power

> which the law confers on corporations and private proprietors to withhold land from the market *at a minimum cost*. It will be clear that if the law encourages an artificial scarcity, *it creates an unnatural dearness*. By permitting corporations to hold land in towns, it gives such persons a power of exacting the highest terms possible for the use of their property, by keeping it out of the market till they can enforce their price. To use an American phrase, taken from the slang of speculators, the Russells and the Bentincks, the Cecils, the Portmans, the Grosvenors, and the rest, with the corporations, have had for a long period a ring or corner in the land market, and can force buyers to give famine prices.[25]

There can be no doubt that rent rises were making themselves felt. Radcliffe observed that 'the change from the old system of hand-labour to the new one of machinery operated in raising the price of land...'[26] There was, admittedly, a financial burden on the landowners: poor rates were rising. This, however, was something which they could well afford to accept. 'The rise of the poor rate was certainly vexatious,' wrote Halévy, 'but was compensated by the rise of land values. A farm of 100 acres counted for very little, but when this insignificant piece of land became the site of an entire suburb of some large town, the owner found his property better worth having.'[27]

The mill owners had to buy or rent more land before they could undertake investment in new technology and reorganise their plants to combine the process of spinning, weaving and finishing the cloth. If rents were at a realistic market level (i.e., the surplus above the returns to labour and capital), this would have been a paying proposition. But rents were penal. A capitalist who undertook the expansion of his factory, and installed the power looms, would have had to have accepted an uncompetitive rate of return on his capital. So it was necessary to retain the use of an obsolete process of production by letting the hand weavers in their damp cellars carry the burden of the rents! Not until 1818 to 1820 did the pressure of speculative rents ease off: and that was when the entrepreneurs undertook their capital investment and modernisation programmes.

The macro-economic influences of the land monopolist were hidden from the public consciousness. This does not mean that the victims could not see the visible effects of land speculation. 'It is well known that vile and loathsome buildings, probably the property of some opulent landowner, yield from the misery of their inmates a far larger rent than the plots on which the most luxurious and convenient mansions are built.'[28] But the way that the exploiters distorted the allocation of resources and the pattern of consumption and production, and the whole range of matters — social and environmental — which constitute the human condition, were well concealed from the political and economic decision-makers of the time.

This is not to admit that the processes could not have been correctly analysed. Radcliffe provided a remarkably detailed account of the causal connection between the development of land values, technological advances and the growth of output.[29] When the machine was introduced into the process of spinning yarn there was an immediate demand for new space. Old loom-shops were inadequate, so that 'every lumber-room, even old barns, cart-houses, and outbuildings of any description were repaired, windows broke through the old blank walls, and all fitted up for loom-shops. This source of making room being at length exhausted, new weavers' cottages with loom-shops rose up in every direction; all immediately filled'. And along with the increase in wages, rents doubled and trebled. As Radcliffe put it, 'the plough was wholly indebted to the shuttle', although — he claimed — many landlords did not seem to appreciate this fact. Radcliffe was anxious about the fact that the landlords were insufficiently concerned about the commercial welfare of the cotton industry.[30] He warned the landlords that 'the landed and agricultural purses were filled even to the brim by every article produced from the soil, or the farm yard being raised in price in proportion to the advanced labour and profit above-mentioned. *This source held out even when the income from manufacturers and commerce had gone to the continent with the raw material, cotton yarns; but unless this new system checks its decline, it cannot hold out much longer!*'[31]

The weavers were obliged to spend long hours in a damp atmosphere in confined workrooms, often cellars near streams; the dampness was necessary to keep the thread supple. The power loom afforded the prospect of dry, healthy working conditions in new factories, as Radcliffe persisted in pointing out. But the machine could not come to their aid: it, too, was a victim of land monopoly.

The cotton weavers were trapped in a captive labour market. Ideally, they should have been free to decline to work in the industrial sector, which they would have done had their land not been confiscated from them and their forefathers. The entrepreneurs should have had to have *attracted* them off the land. Wages and working conditions would have had to have been at least as good as what the self-employed farmer/artisan could provide for himself.

But the freedom to decide one's future was effectively denied to the workers and those who saved or borrowed to go into business on their own account. Labour and capital were united as victims of the land monopolists, and there was greater sympathy between them than is generally admitted. During the agitations of the time, the weavers who combined to press for higher wages did not propose that these should come out of existing profits: they recommended that prices should be raised. And there were sympathetic employers (Radcliffe was not alone) who did want to raise wages. The landlords in Parliament looked upon these proposals with horror. A general rise in wages would have come out of the 'surplus' of the nation's product, which would have entailed a reduction in rental income.

Fortunately for the land monopolists, they had a reliable spokesman in the Home Secretary, Lord Sidmouth, the owner of considerable estates. Sidmouth used spies to watch over, and prosecute, the hungry workers. When it was discovered that magistrates could use existing laws to enforce a minimum living wage he acted promptly in the House of Lords: the laws were repealed.[32] Consequently, with both man and machine shackled to a particularly severe phase of exploitation by the land monopolists, the owners of labour and capital found themselves competing with each other instead of cooperating to their mutual advantage.

The landed class did not relent on its demands. The squeeze on profit margins threatened to put many manufacturers out of business, the fate which did in fact await many of them. Radcliffe was aware of the criticisms levelled against landlords, who 'have been censured for raising their rents at this period, and subsequently still higher'. But he did not begrudge them their exactions. He was, after all, receiving rents from his farms in Mellor.

> If every manufacturer or merchant (for it is to this class I am alluding) will now only fancy himself to have been one of these land-owners at that time, and lay his hand upon his heart and say what *he* would have done under the circumstances I have been stating, I think there is not *one* of these theoretical censors that would be found to cast a second stone.[33]

Under the ruling system of property rights and taxation laws, of course, Radcliffe was right in predicting how the urban capitalists would have responded had they anticipated the trend in land values. But this does not justify what happened, nor did it relieve Radcliffe of the responsibility for correctly apportioning guilt for the problems which ensued.

The problems of the cotton industry can be illuminated in theoretical terms. Rent is an economic surplus, the amount left over from production once labour and capital have received their share — a share determined through competition for the opportunity to use the available resources to create new wealth. The amount which is received by capitalists and labourers has to be sufficient to attract them into the most rewarding activities, and enable them to reproduce over time. If landowners are under the pressure of competition, they will be forced to accept the surplus, and no more. In the absence of any inducement to compete, monopoly power enables them to demand a disproportionately large share of output. They are in the happy position of the highwayman who can demand 'Your money or your life', but with no risk of retribution. For they control the hangman through the legislature!

By imposing increasing demands on the wealth-creating agencies, or by refusing to reduce their exactions as the value of output declines, land monopolists eat into the share which ought to go to labour and capital as wages and interest. This is an irrational situation which cannot last for long. The system must break down. Capital is withdrawn when yields become unacceptably low, and investors are deterred from undertaking fresh capital formation. Labour goes hungry and either dies or suffers from malnutrition. Aggregate output contracts, and sooner or later the landlords are forced by realities to accept a cut-back in their rents — or to hold their land idle, in the certain expectation that, sooner or later, the demand for their land will yield the rents they originally demanded.

For the cotton industry in Radcliffe's time, unfortunately, there was no fiscal mechanism to force down rents to market levels. The increasing speculation in land forced up rents, squeezed interest and wages, and deterred manufacturers from investing money in power looms. By forcing rents beyond the point of merely appropriating the economic surplus, they were effectively demanding a slice of future output in the current period. This inherently unstable situation must, as it did, lead to a general recession.

The insights which we can extract from a review of William Radcliffe's record of the cotton industry have not been exhausted. We will allude to one more, for it has significant general relevance. In 1815, with the end of the Napoleonic war, the landlords were anxious about the prospect of a decline in their revenue. Cheap imports would force down the price of food, and thereby compel a reduction in rents. Once again the landlords demanded a Corn Law which would protect their privileged status. So while industry was required to compete, the landlords in Parliament were able to make an exception of their 'special' case. Radcliffe intervened on their side.[34] He argued that farmers were entitled to a secure domestic market, free from the threat of foreign competition, so that they might expand output to meet demand and thereby reduce their prices. This, in fact, is not the economic effect of protection. In reality, the landlords benefit from an artificial price rise, by capitalising the inflated prices into higher rents and selling prices of land. So, unwittingly, Radcliffe supported Parliamentary action which was expressly designed to aggravate the problem which confronted his industry! He realised that the Corn Bill would increase the food prices paid by workers, and that he would have to pay more for the three sacks of flour which he used every week with which to make paste for his factory. Had he used this as a clue, he could have seen that reduced wheat prices meant higher living standards for the workers, higher profits for the industry and a greater ability to withstand any advantage which foreign competitors might enjoy.

Nevertheless, we have to be tolerant towards Radcliffe. He was an entrepreneur and innovator who wanted nothing more than the freedom to increase the material wealth and spiritual well-being of himself, his employees and his country. Adam Smith, on the other hand, had enjoyed far more leisure time in which to reflect on matters of economic theory, and yet he had failed to warn the public of the horrible results arising from his defence of the landlords' right not to be taxed if they chose not to release their land for use by others. It was not until 1840 that P.J. Proudhon, the French anarchist philosopher, published a book that alerted the world (if it wished to listen) to the way in which land monopoly encouraged labour and the owners of capital to adopt restrictive practices as a defensive response to the original monopoly in land.[35]

Contemporary historians, who as a group have concentrated on the affairs of the aristocracy and the issues of state, have compounded our problems by their neglecting to study the impact of land monopoly on the first infant industrial system. Prof. Hoskins declared of this period:

> ... the land inside the older towns was acquiring a scarcity value, above all in the towns that were surrounded by open fields, so that they could now grow outwards, and a steady rise in the price of land for building was added to the rise in the price of borrowed money. Possibly, too, the building trade was invaded by a new class of speculator who made conditions even worse than they need have been by extracting high profits out of the unprecedented demand for cheap houses. No one has studied this particular class of parasite, how he worked, in what opulence his descendents live today forgetful, or perhaps ignorant, of the origin of their wealth. Their forebears would make a fruitful study.[36]

As the towns grew, noted the Hammonds, 'the spaces of common within their borders became more valuable, and they were appropriated by the powerful classes'.[37] These two students of working class history were almost right to conclude that the advance in the value of ground rents during the Industrial Revolution was such that 'any pupil of Adam Smith would have put a tax on the immense wealth created in the new industrial towns and taken off the heavy burdens on food, clothing and the materials of industry'.[38] This is exactly what *ought* to have happened, but was precisely what did not happen, thanks in no small part to the compromise in the teaching of Adam Smith. Had he indeed been an enlightened fiscal counsellor, the evolution of modern Western society would have been transformed for the good of all, beyond all recognition.

Notes

1 J.R. Hicks, *A Theory of Economic History*, Oxford University Press, 1969, p. 148. See also E.J. Hobsbawm, 'The British Standard of Living, 1790-1850', *Economic History Review*, X (1957).
2 Quoted in J.L. and B. Hammond, *The Skilled Labourer 1760-1832*, London: Longmans, Green & Co., 1933, p. 71. Credence to this view has been lent by a modern Marxist historian, E.P. Thompson, *The Making of the English Working Class*, Harmondsworth: Penguin, 1968, p. 309.
3 E. Halévy, *England in 1815*, London: Ernest Benn, 1960, p. 290.
4 Hammonds, *op. cit.*, p. 72.
5 Although they were aware of this astonishingly slow rate of growth, the Hammonds subscribed to the thesis that wages were forced down by competition from the machines. *Ibid.*, p. 71. In fact, the share of industry using power looms was too small before the 1820s to influence the level of wages.
6 F. Collier, *The Family Economy of the Working Class in the Cotton Industry 1784-1833*, Manchester University Press, p. 43.
7 'The evidence suggests, therefore, that as the English and Scots handloom weavers left the trade, or died, their places were taken by low-grade Irish labour at starvation rates of wages.' A. Redford, *Labour Migration in England*, Manchester University Press, 1964, p. 42.
8 Halévy, *op. cit.*, p. 292. For evidence of a drop in the price of cotton, see testimony of James Kay, a Bury cotton manufacturer, in a House of Commons committee report, cited in *English Economic History*, eds.: A.E. Bland, P.A. Brown and R.H. Tawney, London: G. Bell, 1933, p. 501.
9 Halévy, *op. cit.*, p. 289.
10 *Ibid.*, p. 290
11 *Ibid.*, p. 289, n. 2.
12 *Ibid.*, p. 293
13 W. Radcliffe, *Letters on the Evils of the Exportation of Cotton Yarns*, Stockport, 1811.
14 W. Radcliffe, *Origins of the New System of manufacture commonly called power-loom weaving*, Stockport, 1828, p. 17.
15 *Ibid.*, pp. 16, 106-7.
16 Hammonds, *The Skilled Labourer*, *op. cit.*, pp. 278-9.
17 *Op. cit.*, pp. 54, 62, 66.
18 *Ibid.*, p. 49.
19 The Speenhamland system of wage subsidies was introduced in 1795 to try and deal with this problem. 'These allowances out of local rates were meant to keep labour above the starvation level at least. The system of outdoor relief, designed as a local expedient, spread rapidly throughout the country. Although they probably prevented much actual starvation, the wage subsidies did not keep real wages from falling.' A.D. Gayer, W.W. Rostow, and A.J. Schwarts, *The Growth and Fluctuation of the British Economy 1790-1850*, Oxford: Clarendon Press, 1953, p. 56.
20 *Op. cit.*, pp. 48, 15-16.
21 *Ibid.*, p. 92.
22 *Ibid.*, p. 63.
23 *Ibid.*, p. 92.
24 F.M.L. Thompson, 'The Land Market', *op. cit.*, and R.J. Thompson, 'An

Enquiry into the Rent of Agricultural Land in England and Wales during the Nineteenth Century', in *Essays in Agrarian History, op. cit.*

25 J.E.T. Rogers, *Six Centuries of Work and Wages*, London: Swan Sonnenschein & Co, 1903, p.486. Our emphases.

26 *Op. cit.*, p.59.

27 *Op. cit.*, p.283.

28 Rogers, *op. cit.*, p.426. Aston, in his *Picture of Manchester* (1810), observed that attention in the city had been 'too minutely directed to the value of land to sacrifice much to public convenience or the conservation of health'. Cited by Hammonds, *The Town Labourer 1760-1832*, London: Longmans, Green & Co., 1919, p.45.

29 *Op. cit.*, pp.58 and 65 ff.

30 *Ibid.*, pp.48, 69, 70n.

31 *Ibid.*, p.56: our emphasis.

32 See, e.g., the account of the weavers' strike of 1818, and the masters' plan for a minimum wage, in Hammonds, *The Skilled Labourer*, pp.109-126; on Sidmouth, *ibid.*, pp.86-7, 90-1 and 315.

33 *Op. cit.*, pp.66-7.

34 *ibid.*, p.176ff.

35 P.J. Proudhon, *What is Property?* New York: Dover Publications, Inc., 1970, translated by B.J. Tucker, pp.183-184. Proudhon recognised the cathartic role of recessions when, having described how the idle land monopolist exploited labour and capital, he added: 'Here, then, we have a society which is continually decimating itself, and which would destroy itself, did not the periodical occurrence of failures, bankruptcies, and political and economical catastrophes re-establish equilibrium, and distract attention from the real causes of the universal distress' (*ibid.*, p.185).

36 W.G. Hoskins, *The Making of the English Landscape*, Harmondsworth: Pelican, 1970, p.226.

37 *The Town Labourer, 1760-1832, op. cit.*, p.44.

38 *Ibid.*, p.214.