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Shame and Guilt in Lancashire: Enforcing Piece Rate Contracts

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Shame and Guilt in Lancashire: Enforcing Piece Rate Contracts*

Michael Huberman†

Résumé / Abstract

En général, les employeurs et les employés ont de la difficulté à maintenir un niveau de paiement stable quand le paiement est à la pièce. En citant des exemples de l'industrie du textile britannique du 19e siècle, cet article vise à examiner les différentes approches que les acteurs ont utilisées afin de garder le niveau de paiement. Les stratégies adoptées ont dépendu des réponses émotionnelles des travailleurs et surtout de leurs relations avec leurs homologues et leurs patrons. Suivant le modèle de Lazear (1995), je suggère que les sanctions externes étaient privilégiées dans une culture de honte où les travailleurs étaient indifférents à l'égard du bien-être de leurs homologues et de celui de leurs patrons. Dans ces cultures, les acteurs ont utilisé les listes pour protéger la méthode de paiement. Là où les travailleurs ont valorisé davantage leurs relations avec leurs homologues,c'est-à-dire une culture de culpabilité, les sanctions internes étaient utilisées. Dans cette culture, un système de partage des profits était établi afin de garder la méthode de paiement.

The ratchet effect undermines firms' ability to pay workers a steady piece rate. Using examples from the nineteenth-century British textile industry, this paper studies the different strategies firms and workers used to enforce piece rates. The strategies depended upon the emotional responses of workers, especially their relationship with their co-workers and with their employers. Following Lazear (1995), I argue that external or shame-based sanctions were prevalent in communities where workers showed indifference between the welfare of their co-workers and that of their bosses. In these cases, blacklists enforced the piece rate. Where workers felt more guilt about the welfare of their coworkers, internal sanctions were common. In guilt cultures, profit-sharing schemes enforced the established piece rate.

Mots Clés : Méthodes de paiement, paiement à la pièce, partage des profits, histoire économique britannique

Keywords : Methods of pay, piece rates, profit-sharing, British economic history

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Introduction

In his Presidential address to the Economic History Association, Peter Temin (1997) asked whether it was "kosher" to talk about culture. In this study of the ratchet effect I pose whether it is also 'korrekt' to talk about Freud. The ratchet effect refers to competitive pressures to cut piece rates, even after they have been fixed at some norm or standard rate. Containing these pressures requires some means of enforcement (Kanemoto and MacLeod 1992). Workers and firms, or some third party, can take it upon themselves to enforce the norm and punish rate busters; or the norm can be self-enforced without redress to external sanctions. The choice of enforcement will depend on the emotional responses of workers: how they perceive and adjust to their relationship with co-workers and their employers. External sanctions are prevalent where shame is the dominant emotion. Internal sanctions or self-enforcement are most common in guilt cultures.

The varieties of pay methods and regional specialization in the Lancashire cotton-textile industry of the mid to late nineteenth century provide the background to this paper's study of enforcement mechanisms. In particular, I examine the Bolton (fine spinning) and Oldham (coarse spinning) payment schemes. At mid century, payment by the piece was the universal form of remuneration in Lancashire. In the 1870s, however, Oldham employers attached a profit-sharing scheme to piece-rate pay. Enforcement in this case was by internal or guilt-based sanctions. Workers performed to their best abilities - they did not free ride or shirk - because they had a strong internal desire not to let their co-workers down. Compared to a basic piece-rate scheme, profit sharing had the effect of raising productivity and stabilising employment. Bolton, in contrast, lacked the emotional bent necessary to transform its system. Workers in the town were indifferent between the well-being of their co-workers and their bosses. Under these conditions, as Lazear (1995) has shown, there are no gains to profit sharing because the free-rider problem will persist. In Bolton, workers continued to be paid by a strict piece rate and external sanctions that aroused shame emotions contained the ratchet effect.

How did these two enforcement systems arise? What was the relation between the two systems and technical change, wage growth and profits? If profit sharing was superior, as is commonly supposed, how did the two systems coexist? As Farnie (1982, 50) has written, "the rapid rise of Oldham provides a sharp contrast to the economic history of Bolton, which grew relatively slowly and like a tree rather than a mushroom." Britain's comparative advantage actually lay in fine spinning and Oldham's rise is therefore all the more surprising in the face of stiff competition from low-wage countries in its overseas markets for coarse yarn and goods. Was Lancashire's decline a result of too much guilt and not enough shame?

The Ratchet Effect in Lancashire

Business and economic historians, sociologists and other students of industrial relations have documented numerous episodes of piece-rate remuneration where it was in the interest of both workers and firms to fix rates at some norm or standard level.[1] This solution stems from the commitment of workers not to engage in restriction of output campaigns, and from the commitment of firms to abstain from rate cutting at the first sign of falling revenues. Thus, Daniel Nelson in his study of industrial relations in late nineteenth-century US found that firms urged one another to exercise self-restraint in cutting piece rates, so that workers would have no reason to engage in quota restriction. "Employers who gave the situation serious thought soon came to the conclusion that the solution lay in two areas: more care in rate fixing and guarantee against rate cutting (Nelson 1975, 45)."

The establishment of piece rate lists in Lancashire would appear to be consistent with this trend. During the early factory period in Lancashire episodes of rate cutting by employers were common.[2] In order to show employers that they would or could not work at the lower rates, because of the extra effort required or because of the lower earnings it would entail, workers often resorted strategically to formal campaigns of stopping production (strikes) or informal means, like restricting output or goldbricking. These campaigns were costly to all parties - workers lost earnings, firms lost output. By the second generation of factory work both parties recognized that it was in their joint interest to set rates in fixed lists. These lists stipulated how much workers were to be paid for spinning different counts of yarn on different lengths of spinning machines (mules). The payment scheme was rigid in the sense that, although cyclical adjustments were made of normally five percent below or above the published standard list depending on the state of the industry, the structure or makeup of the lists was not altered.

The lists first appeared in fine spinning because the sector had been in the forefront of the industry's development since the late eighteenth century.[3] An

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[1] For early studies, see Mathewson (1969) and Roy (1952). These case studies and others are reviewed in Miller (1992).

[2] For accounts of industrial relations until 1850 see, Cohen (1990), Huberman (1996) and Lazonick (1990).

[3] The history of the lists is found in British Association (1887), Huberman (1995, 1996), and Jewkes and Gray (1935).

early example is the Bolton list of 1813 that stipulated prices paid per lb of yarn.[4] Earnings varied with the vintage of the machinery. A spinner working a newer mule would earn higher wages, but labour costs per lb of yarn spun were the same on old and new machinery. The Bolton list had no speed clause which meant that if the machines went faster, workers' earnings went up proportionately.

Lists in coarse spinning developed much later. The Oldham list actually dates from 1872. It calculated how much yarn could be normally spun on mules of different speeds and lengths. To set the piece rate, normal production on a given mule was divided into the standard weekly wage, a time component each spinner was ensured of. Unlike Bolton's, the Oldham list made for equal earnings, but unequal labour costs per lb of yarn spun. Later variants of the Oldham list included a speed clause that split the gains in output between firms and workers. I will return to this adjustment below.

The early lists were often negotiated by informal groups of workers and employers. In fact, the lists seem to have predated permanent employers' associations, but once organized employers recognized unions as the legitimate bargaining agent of workers. In other words, the lists encouraged the 'modernization' of industrial bargaining. There were tensions, nonetheless. Into the last quarter of the nineteenth century there were disputes over bad spinning (the use of inferior raw cotton), the timing and extent of wage cuts and over accusations that firms had reneged on agreements to restore wage cuts. Thus, collaboration was imperfect.

The structure of the lists themselves contributed to their instability. The lists' makeup implied that it was relatively cheaper to use the Bolton list to spin certain counts of coarse yarn, and that it was less expensive to spin selected fine-yarn counts using the Oldham list. Given the proximity of towns in Lancashire and the high mobility of capital, and the obvious benefits for some individual firms and workers to break the district lists, it is remarkable that they became dominant in the first place. Evidently, some mills attempted to take advantage of the price differentials. Acknowledging these differentials, Jewkes and Gray (1935, 103), the historians of the lists, wrote: "[T]he observable differences have no real relation to technical conditions, but are the outcome of chance, or the unforeseen offspring of some muddled industrial struggle."

The instability or fragility of the lists was the result of an inherent problem of piece-rate remuneration: the transparent relation between earnings and output.

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[4] The Bolton list became the model for other fine-spinning lists, such as the Manchester list of 1829.

Consider a firm paying a linear piece rate that introduces a new technology without any adjustment of rates. Workers gain experience in the new technology and their output and earnings rise. However, cooperation between workers and firms is shortlived because, in a competitive environment, new technologies and skills spread from one firm to another. Other firms, sometimes started by former employees of the first, can always undercut (or ratchet down) the innovating firm by starting up a new operation, teaching the new techniques and setting a lower piece rate. Even if individual firms and workers wish to protect rates, the forces of competition overwhelm them. The disputes in Lancashire were the outgrowth of these tensions.

Still, the lists were not scrapped and they survived into the inter-war years. This implies that some formal or informal means of reward and punishment, carrot and stick, was in place to enforce the lists and contain the ratchet effect. Jewkes and Gray (ibid.) asserted it was due to "sanction and prestige." This was the case in Bolton where employers used external sanctions, like blacklists, to penalize workers. In Oldham, employers had the insight to attach a profit-sharing scheme to the lists. Profit sharing worked in Oldham because it was based on a self-enforcing or an internal incentive structure. To develop the distinction between internal and external sanctions and their implications, the next section draws on insights from the psychology literature on shame and guilt.

Shame and Guilt

Economists have often invoked reputational effects as the mechanism enforcing incomplete contracts like piece-rate payments. Firms and workers abide by their agreements because of the potential damage caused to their reputations in finding new workers or jobs. But this approach remains unsatisfactory because reputation is an historically contingent phenomenon. There is also an element of introspection lacking in this analysis. Not all societies or cultures care the same way about reputations, the classic example being how Japanese and American business executives have reacted to laying off workers. While the Japanese manager has often felt that he has let down his workers, the American executive has rewarded himself with pay increases.

Psychologists make the distinction between two types of emotional responses in these situations: guilt and shame.[5] These two emotions reveal different person-environment relationships. Guilt arises from <u>internalized</u> values about

[5] My analysis of shame and guilt is based on Lazarus (1991, 240-47). For treatments by anthropologists, see Benedict (1946); for applications in law, see Kahan (1996). See also Piers and Singer (1971) for a critique.

right and wrong (that is, what parents and society would like the person to be). They are said to be based on prosocial feelings and empathic concern over the distress of others, particularly those who share similar backgrounds or concerns, like family members, neighbours or fellow workers, or what can be referred to as horizontal attachments. Guilt feelings are aroused when we learn to acknowledge and understand the social significance of violations of standards of conduct, the transgression of a moral imperative. For our purposes, workers are motivated to do well not so much by the direct pressure of their peers, but by feelings internalized toward their comrades. Thus, a worker will not contribute to the ratchet effect by taking her ideas to a new firm because doing so brings on bad feelings about what she is doing to others.

Shame is generated by a failure to live up to one's ego identity (that is discrepancies between what persons are and what they would like to be). When we don't live up to some ideal, we have disappointed the person, usually a parent or parent-substitute at the source of the ego-ideal. We would not feel shame or humiliation if it were not for this external sanction or approbation of the authority figure, a vertical attachment. Sooner or later through repeated action we become habituated to the threat of external sanctions, and we act as if they are internalized. This makes guilt and shame difficult to distinguish, but the difference is that shame enforcement needs to be resorted to at least occasionally to remind us of our relationship with our authority figure. For our purposes, it is the possibility of sanctions emanating from the parent-substitute, the employer, that compels workers not to contravene the piece-rate contract.

The contrast between guilt and shame is therefore not black and white, but it is the proportions that are crucial in making sense of social relationships. I follow Lazear's (1995) use of guilt and shame to clarify the implications of different emotional responses for worker-worker and worker-firm relationships, and how these two different responses contain the ratchet effect. In guilt-based societies workers have strong feelings about their co-workers, because if they let them down they would be breaking some moral imperative; workers would avoid free riding (under performing or shirking) if this meant hurting their co-workers. But in shame-based societies, because of the ego-ideal, the worker is in fact indifferent how they feel toward their colleagues or their boss. Thus, a worker who is not penalized in a shame-dominated culture would engage in free riding whether or not this may hurt the owners of capital or their fellow worker.

Consider an employer who pays a straight time-wage to his workers. If a worker in either a guilt or shame-based environment does not perform well, that is shirk, she will hurt the owners of capital. To motivate workers, the employer decides to introduce a profit-sharing scheme. What prevents workers from continuing to under perform (the free-rider effect)? In shame-based societies, where a worker is at best indifferent toward his fellow workers, she might in fact continue to under produce, however she takes the risk of being sanctioned by the employer, a gamble that might be worth taking. Hence, there is little gain to profit share. But in guilt-based communities, there are potential gains because workers care more about their colleagues than their bosses. They work hard to avoid breaking the moral imperative of not letting down their fellow workers.

Proponents of profit sharing (Kruse 1993) have observed its positive effect on productivity and the stability of employment. Profit sharing has the additional virtue of containing the ratchet effect, because workers as investors would be reluctant to take new technologies to competing firms. In shame-based environments, this alternative is not feasible since workers would take the new technology elsewhere if they could. They do not because external sanctions are in place that make this behaviour costly.

Does the model mesh with the Lancashire experience? Since shame and guilt are not observed directly, I take the alternative approach and consider the initial conditions in Bolton and Oldham and consider how shame and guilt-based environments developed. I then ask whether the types of enforcement observed in the two towns are consistent with the initial conditions.

Bolton and Oldham: Paternalism and Confrontation

Beginning with the introduction of Crompton's mule, Bolton grew rapidly as a center of the fine-spinning trade in Lancashire. Unlike in Manchester, where there was a wide variety of work, firms in Bolton spun medium and high counts of yarn almost exclusively. With the expansion of fine spinning, Bolton grew rapidly in the first decades of the century. By 1811, the town had 33 mills that spun fine yarn, and the average mill had about 150 workers. In this expansion, as in later years, the family firm dominated (Honeyman 1982). After 1825, markets stagnated, and factories in fine spinning added little new capacity. Still, as late as 1841 the average fine-spinning mill in Lancashire employed approximately 200 workers and was nearly twice as large as the average coarse-spinning establishment.

Disputes and strikes into the 1820s and later over the introduction of longer spinning mules and piece rate cuts were not unknown. Thompson (1968, 536) wrote that from the late 1790s to 1820, "Bolton appears to have been the most insurrectionary centre in England." Thereafter, the bitterness that marked the early period of industrial relations dissipated. From the 1840s on, according to the most recent history of Bolton (Taylor 1995), paternalism became the hallmark of worker-firm relations.[6] "The vulnerability of labour to the activities of innovating employers...played an important role in the greater subordination of labour to capital after the Chartist period (ibid. 126)." Employers' concern for the welfare of their workers was manifested in factory schools, libraries, housing, picnics and Christmas parties. Employers hoped to strengthen workers' attachment to them, or, as one employer put it, "to cement a feeling of...mutual interest" (ibid. 208). The low rate of turnover of firms and their large size gave mid-nineteenth century Bolton the appearance of a hierarchical, almost manorial community in which workers and firms held reciprocal obligations. Even as early as the 1830s, a cotton spinner (cited in Taylor 1995, 173) commented:

> "[T]hough an artizan, not in the service of a master owes no obedience[,] no sooner does he engage to exchange his labour with a richer fellow, subject for some stipulated remuneration, then his condition is changed; he then owes a reasonable obedience to his employer, and the employer acquires a reasonable authority over his servant."

In terms of the psychology literature reviewed above, workers' ego-ideal had become shaped and strengthened by their parent-substitute or employer.

Craft unionism appears to have flourished in this environment. The Bolton spinner's union maintained its independence from employers. Promotion was based on seniority. Bolton spinners hired, negotiated with and paid their own piecers and nominated them for advancement (Savage 1987, 237); they were also responsible for the maintenance and repair of their machines and adjusting operating speeds (Bolin-Hort 1989, 158-61). The role of overlookers was quite limited. Indeed, the popularity of Bolton style paternalism was due in part to the fact that spinners could appeal directly to their employers if overlookers had interfered too much in spinning operations. The strong presence of unions on the shop floor would seem not to fit with commonly held views about paternalism. In weaving centres such as Blackburn paternalism meant weak unions. In the 1920s firms in the U.S., like Sears and Kodak, saw paternalism as an alternative to unionisation (Jacoby 1997). But in Bolton, from the 1840s until the turn of century, spinners accepted the authority of employers, and in exchange craft unions

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[6] On the history of paternalism in Britain, see Rose (1990). Joyce (1982) argued that paternalism was a new initiative in industrial relations after 1850, but Taylor (1995) has stressed its continuity.

were able to protect their position on the mill floor. Thus, workers' preferences were divided between unions and bosses.

The spread of factory industry occurred later in Oldham than in Bolton, although the two towns were no more than fifty miles apart. Until 1850 or so, many Oldham firms rented or shared space and power in a larger mill. The 'room and turning system' maintained the small firm as the typical unit of production. The system, according to Farnie (1979, 246), "accentuated the degree of competition, and increased the mortality rate among factory masters," and again in contrast with Bolton, prevented "the family firm from establishing an hereditary monopoly of local industry under a separate caste of employers." As late as 1841, the average coarse mill employed only 100 workers. Breaking with the ownership tradition of Lancashire towns, Oldham became known as "the pariah of the cotton trade," or a "frontier town (ibid. 45)." "Whether or not Oldham was rough," Joyce (1991, 30) wrote, "it was certainly vulgar." From the outset the town specialized in coarse spinning, which did not add to its reputation. "The refuse from all the other Lancashire towns is brought to [Oldham], and worked up into the coarsest and trashiest fabrics (Farnie 1982, 44)." Faced by competitive pressures, employers introduced new technologies, like the self-acting mule, and slashed piece rates.

In response a core group of Oldham workers, including cotton spinners, machine-builders and miners, organized to defend their social and industrial position. The mantle of radicalism had passed from Bolton to Oldham. Although Foster's (1974) account of the development of "revolutionary class consciousness" in the town remains controversial, recent historians have not dismissed entirely the town's exceptional radical bent.[7] Oldham's workers did show comparatively a greater degree of cohesion that was revealed in recurrent confrontations with employers both on the factory floor and in the political arena, and by the second quarter of the century, it was probably the most radical centre in Lancashire (Joyce 1980, 161). Whereas in Bolton it appears that the working-class leaders moved freely into liberalism, in Oldham liberals and radicals held separate and often competing positions with regard to changes in the Poor Law, the abolition of the Corn Laws and the Reform Bill. The Oldham radical position represented a shared or common belief in an alternative model to the factory, while in Bolton such visions like Owenism had limited appeal. Gadian (1996, 279) observed: "Oldham's high level of political mobilization meant that the beliefs of the mass of the population were particularly crucial...[and] radicalism's strength had been based upon its ability to give expression to the views of the operative and non-elector."

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[7] The standard critique of Foster is Stedman Jones (1983). For other contributions to the debate, see Gadian (1978, 1996), Sykes (1980), and Winstanley (1993).

By 1850 or so, the context of social relationships was well defined in Bolton and Oldham. Paternalist or vertical arrangements characterized Bolton to the extent that workers believed that their interests were served as well by their employers as by independent working-class organisations. Thus, an individual Bolton worker could be said to indifferent as to the sort of his employer or fellow worker. This established the need for shame-based enforcement of piece rates. In Oldham, because of strong horizontal attachments, workers saw that their interests were distinct from those of their employers. Their shared experience of confrontation set the foundation for guilt-based enforcement.

The Oldham Limiteds

Consistent with its tradition of a strong worker culture, the 1850s in Oldham saw the expansion of friendly and building societies, sick and funeral clubs, and above all, of cooperative stores. Oldham became a cooperative centre second in importance only to Rochdale. These societies, along with the Joint Stock Acts of 1855-56, laid the foundation for the popularity of limited liability companies. The pioneer company, the Oldham Building and Manufacturing Co. Ltd., was formed by skilled workers who sought to gain through cooperation a greater equality of income and wealth. The Oldham Building Co. later became the Sun Mill Co. Ltd, which soon evolved into the largest mill in the district, paying an annual average dividend of 12 1/3 percent.[8] Workers involvement as investors at Sun Mill was limited, but they did gain experience as managers, purchasers of raw cotton and sellers of yarn. Motivated by the high dividends paid by the Sun Mill, and the example of cooperatives during the Paris Commune, workers played a more active investing role during the first wave of expansion of the limiteds between 1870 and 1873, and the subsequent wave of 1873-75. When the boom ended a hundred companies had been created. Many of the new companies were conversions of failing private concerns. There were two other booms, 1883-84 and 1889-90. In all, from 1858-96, Oldham formed 154 limiteds, or more than twice as much as found in Bolton (Farnie 1979, 250-51). The only other part of the textile industry where the limited company had the same hold as in Oldham was the Irish linen trade (Cottrell 1980, 105).

To eliminate free riding completely and get the full gains of profit sharing, membership in the plans would have had to been universal. Although membership was voluntary in Oldham, by about 1875 or so, about 75 percent of the working class held shares in the limiteds, or about 20 percent of the

[8] On the history of Sun Mill, see Smith (1961) and Tyson (1962).

town's population (Farnie 1979, 250). Companies' capital consisted of loan finance as well as equity subscriptions, generally in equal proportions. (Cottrell 1980, 110). Unfortunately, few statistics of the actual amounts held by workers have survived, but appears that loan accounts were favored by the uninitiated. Companies generally issued loan shares of £5 denomination which amounted to roughly three weeks' pay for the average cotton spinner (30-35s per week). Workers made investments in their own mill, but also in competing mills to diversify their risk. Their returns varied considerably, from 5 to 20 percent by some accounts in the 1870s, but always more that could be earned at a local savings bank which paid 2 3/4 percent. The 5 percent was fixed by custom and did not vary with the condition of the money market. With the expansion of profit sharing schemes in the 1870s, Oldham had transformed itself from a "frontier" or "radical" town into "Diviborough," in which, to borrow Gladstone's (cited in Farnie 1979, 248), phrase, the working class had become "an association of small capitalists employing other work people."

The expansion of the limiteds coincided with changes in industrial relations. Lazear (1995, 49) noted the importance to employers of investing in arrangements that created bonds among workers in order to arouse latent guilt-based emotions. In Oldham, this investment took the form of changes to the 1872 list. Recall that the original 1872 list made no adjustment for the speed of machinery, and because of the nature of the list - it fixed workers' earnings - employers gained all the benefits of additional speed-up. When the original three year agreement expired, a general strike ensued during which spinners threatened to sell their shares in the limiteds. The dispute of six weeks ended when employers conceded a speed clause, an allowance which attributed to operatives half of the increased production. Together with other changes, this meant that their was an immediate gain of 6.5 percent for the spinners (Fowler and Wyke 1987, 73).

In principle, the combination of profit sharing and changes in 1875 to the list would have contained the ratchet effect. The speed clause gave workers as wage earners some of the benefits of the new technologies; and workers as investors would have been reluctant to take these new techniques to competing firms. This constraint was loosened by workers investing elsewhere, and the rivalry between public and private enterprises. As a result, the revised list supplemented by profit sharing did not put an end to the ratchet effect, and competitive pressures forced employers to make adjustments to wage rates (beyond negotiated cyclical changes) and to reduce costs by using inferior types of raw cotton. There were innumerable stoppages in Oldham, especially after the mid-1870s boom.

Having said this, the evidence suggests that profit sharing and the speed clause did succeed in raising productivity and earnings as expected in a guilt-based environment. For each of the three decades between 1876-77 and 1906-07, Lazonick (1990, 162-63) estimated increases in the average number of spindles per mule of 11.5, 4.6 and 12.1 percent, and increases in mule speeds of 6.2, 4.4 and 4.7 percent. Labour productivity is more difficult to measure, because of changes in raw cotton and in the quality of outputs, but a lower bound estimate is that average annual output per operative in coarse spinning grew by about 2.5 percent per annum from 1870 to 1896; in fine spinning it was less than 2 percent (ibid.). As for earnings, Oldham spinners' wages (excluding dividend earnings) increased from 27s 10d in 1860 to 40s per week in 1900; in Bolton the increase was more modest, from 34s to 40s in the same period (Wood 1910).

Ellison (1886, 138), a contemporary historian of the industry, saw a clear connection between the rise in efficiency and profit sharing:

> The daily discussions which take place amongst the shareholders as to why dividends are small or otherwise have led almost every intelligent operative to become more economical with materials, more industrious, and to see what effect his individual [my emphasis] efforts have upon the cost of the materials produced. In fact, the bulk of the working class operatives of Oldham have more knowledge of the buying of cotton, working it up, and selling the manufactured goods than most private employers had ten years ago.

Shareholders, whether workers, merchants or widows, were quite severe with managers who did not perform well. True to their cooperative nature, and the radical egalitarian tradition of the town, limiteds were governed on the principle of 'one man one vote.' This form of company governance was unique in Great Britain. Shareholders, Farnie (1979, 266) observed, proved to be the "strictest of economists and were prepared to oust a whole board, displaying as much ruthlessness as...the leaders of the French Revolution towards their unsuccessful generals." Following these guidelines, free riding must have been strongly discouraged.

Along with increased productivity, advocates (Kruse 1993) of profit sharing make the claim that, compared to a pure wage system, employment is less variable when earnings are tied to some profit indicator or output price. Trade union numbers for the period give some indirect evidence in support of this view.[9] Between 1870 and 1890, membership declined in four years in the

[9] The limiteds were very reluctant to work short-time and this contributed to employment stability in Oldham.

Oldham province; eight years in the Bolton province (Fowler and Wyke 1987, 242). Conversely, relative employment stability led to greater variability in wage rates, and for the period after 1850, the Oldham wage list was adjusted more frequently than that of Bolton (Huberman 1996, 146). However, given the combined effect of a steady stream of dividend earnings and the stability of their employment, Oldham spinners could more easily absorb these wage adjustments than spinners elsewhere. As Farnie (1979, 265) concluded, into the late 1870s, Oldham spinners enjoyed a prosperity absent elsewhere in Lancashire.

Bolton: Tried and True Industrial Relations

In Bolton, the family firm remained the typical unit of production. The town's cooperative tradition was weaker than Oldham's and, in the absence of strong worker attachments, profit-sharing schemes were not viable. There was little interest in public companies, except in insurance (Joyce 1980, 24). In textiles, employers preferred the tried and true management techniques that had been developed since the 1840s. Indeed paternalism's hold appears to have been extended. Writing at the end of the century, the Bolton operative and journalist Allen Clarke (cited in Joyce 1980, 90) echoed the sentiments of the 1830's cotton spinner cited earlier: Workers "think that the masters build factories and workshops not to make a living for themselves by trading but in order to find the people employment. They honestly believe that if there were no mills and workshops the poor people would all perish."

Craft unionism was the other cornerstone of the Bolton model of industrial relations and, like paternalism, it too appears to have been reinforced after mid century. Consider the trend throughout Lancashire to replace the traditional spinner-piecer work unit, the basis of the craft system, with two joiner-minders, each with joint responsibility for spinning operations. Whereas in the former system, the spinner earned more than double his junior worker, wages of joiner-minders were equal, each earning somewhat less than a spinner. It would have been expected that joiner-minding would be more common in regions such as Bolton, where few alternative employment openings for older piecers, gave employers a decided advantage in bargaining. But contrary to expectations, Bolton's operatives' union was the most successful association in Lancashire in defending the craft system. It was in

Oldham where the union allowed joiner-minding at a certain proportion of mules in each mill (Bolin-Hort 1989, 159-60).[10]

Bolton workers were thus caught between competing loyalties: unions and employers. As a result, profit sharing or similar incentive programs that were based on a strong worker culture would have been inappropriate vehicle to contain the ratchet effect. Firms and workers maintained the initial piece rate lists without major changes to it, like speed clauses, and they opted for traditional methods of enforcement or supervision of the lists, such as blacklists and letters of discharge. Although not unknown in Oldham, external sanctions of this type became the dominant enforcement mechanism in Bolton. The fear of ostracism and social censure provoked shame-based emotions and compelled individuals to abide by some norm of behavior. Moreover, since testaments were written they had the force of law. If these sanctions were not in place, individuals would have behaved otherwise.

There were two types of blacklists used before 1850. Worker sponsored blacklists identified mill-owners, usually rural or small mills, who refused to pay by the negotiated regional list, cut wages arbitrarily or who had reneged on a promised wage increase. Workers would also name colleagues who accepted employment at lower than standard wages. The names were most often published in worker or trade union newspapers.[11] It was not uncommon for owners of large mills in Bolton using the most advanced technologies to give their support to workers wishing to protect the regional wage list and curb wage ratcheting at smaller mills; these testimonials appeared in the local press as well.[12] At other times, newspaper columns mentioned employers who had broken a wage commitment to their workers or an agreement concerning short-time.[13] The second type of blacklist was employer sponsored. Employers would identify names of recalcitrant or refractory spinners who had initiated strikes or walkouts. A dismissed spinner could not find employment elsewhere, unless he produced a discharge note from his former employer attesting to his character.[14] Enforcement by sanctions contained the ratchet effect because it required the support of unions operating within a strong

[10] The ability of Bolton piecers to maintain their wages (despite a surplus of young workers) is another indication of the strength of the Bolton craft system. In Oldham, where there was a stronger demand for young workers, piecers' wages were lower.

[11] For example, <u>Voice of the People</u> 24 Feb. 1831.

[12] <u>Bolton Chronicle</u> 29 Oct. 1836.

[13] <u>Manchester Guardian</u> 13 Oct. 1847; <u>Ten Hours Advocate</u> 13 Mar. 1847.

[14] On the history of discharge note or letter, see McIvor (1996, 39). Employers appeared to have the upper hand in the use of blacklists. Union blacklisting and boycotting of underpaying 'unfair' employers was declared an illegal conspiracy in 1875, but as late as the 1890s employer blacklisting was declared legal on the grounds that this was done in order "to defeat and to counter-act the purposes of the men's unions (ibid. 105-06)."

paternalist work relationship. Indeed, sanctions seem to have strengthened craft unionism and paternalism. Because Bolton workers ostracized colleagues who accepted lower wages elsewhere, workers' cohesion was less evident than in Oldham and paternalism was therefore reinforced. Because firms stigmatized individuals workers, craft unions had to better monitor their members, which in turn strengthened the importance of the union as the representative agent of collective bargaining. If the stability of industrial relations after mid century is any indication, paternalism and unions worked well together in enforcing the lists. By the end of the nineteenth century the only real threat to unleashing the ratchet effect came from outside the system itself. Both employers and workers agreed that it was the limiteds of the Oldham type that posed the greatest danger to the Bolton system.

Conclusion: Lancashire on the Couch

The success of the Oldham limiteds was such that coarse spinning became the growth engine of the industry. Between 1866 and 1884, Oldham added 6.6 million spindles, or 81 percent of the total increment made by the whole of the British cotton trade; its share of capacity rose from 9 percent in 1866 to 24 percent in 1884. In 1891, when Oldham reached the summit of its relative importance in the world, it mustered one-sixth of the spindles of Europe and one-eighth of the spindles of the world (Farnie 1982, 41). The ability of the limiteds in raising loans through profit sharing was in part responsible for this rapid expansion. Why did other sectors in the industry not follow this trend? How did two models of enforcement coexist?

The answer lies in the methods of enforcement themselves. Shame and guilt-based enforcement had their origins in the different worker-worker and worker-firm relationships in Bolton and Oldham. As written testaments in Bolton evolved into the standard means of punishing rate busters, institutions and codes of behavior developed around the means of enforcement that further encouraged the parties to exploit emotions of shame. It was in everyone's interest to defend and retain the local method of enforcement. The combined pressure of employers (paternalism) and workers (craft unionism) prevented the intrusion of the limiteds. In many ways, Bolton did not suffer. Investment in fine spinning continued and there was steady improvement in productivity, although not at the pace seen in Oldham.

As for Oldham, and the cotton-spinning industry in general, they were victims of their own success. Because of the initial success of profit sharing and the competitive advantage of limiteds compared to private concerns, internal sanctions based on guilt emotions became the standard means of enforcement in the coarse spinning region. Once profit sharing was in place, it was difficult to go back. It did, however, change its nature. To finance the steady flow of dividends, the limiteds were forced on occasion to disinvest their profits. Thoms (1998, 6) has recently shown that the slump of the 1890s ended the system of the "democratic limiteds." He (1994) found a rising trend in the return to capital from 1886 to 1910, but that the growth of fixed capital investment did not keep pace. Existing companies through generous dividend policies allowed capitalisation to "whither." Recognizing the sector's emphasis on maintaining dividend payments, workers from the 1880s on began drawing down their portion of outstanding loans. The sector had turned from a desire in the 1870s to invest in new plant and equipment to short-term concerns in the 1890s about financial solvency.

Thus, different enforcement mechanisms in two sectors of the industry coexisted, with a noticeable gap between the performance of coarse and fine spinning. Although this is not the place to rehearse the heated debate about the decline of Lancashire, the limiteds and profit sharing contained the ratchet effect, but also created incentives to finance coarse at the expense of fine spinning. The relation between enforcement mechanisms and sectoral growth needs be considered further in explaining why the industry found itself competing with low-wage producers of coarse yarn and goods, like Japan and India. If this relation stands up to further research, then Lancashire can be said to have suffered from too much guilt and not enough shame.

References

Benedict, Ruth. 1946. The Chrysanthemum and the Sword: Patterns of Japanese Culture. Boston: Mifflin.

Bolin-Hort, Per. 1989. Work, Family and the State: Child Labour and the Organization of Production in the British Cotton Industry, 1780-1920. Lund: Lund University Press.

British Association for the Advancement of Science. 1887. On the Regulation of Wages by Means of Lists in the Cotton Industry. Manchester.

Cohen, Issac. 1990. American Management and British Labor: A Comparative Study of the Cotton Spinning Industry. New York: Greenwood Press.

Cottrell, Peter. 1980. Industrial Finance, 1830-1914: The Finance and Organization of English Manufacturing Industry. London: Methuen.

Ellison, Thomas. 1886. The Cotton Trade of Great Britain. London.

Farnie, Douglas A. 1979. The English Cotton Industry in the World Market. Oxford: Oxford University Press, 1979.

Farnie, Douglas A. 1982. "The Emergence of Victorian Oldham as the Centre of the Cotton Spinning Industry," Bulletin of the Saddleworth Historical Society 12 (Autumn), 41-54.

Foster, John. 1974. Class Struggle and the Industrial Revolution. London: Methuen.

Fowler, Allen and Terry Wykes, eds. 1987. The Barefoot Aristocrats: A History of the Amalgamated Association of Operative Cotton Spinners. Littleborough: George Kelsall.

Gadian, David. 1978. "Class Consciousness in Oldham and Other North-West Industrial Towns," Historical Journal 21 (March), 161-72.

Gadian, David. 1996. "Radicalism and Liberalism in Oldham: A Study of Conflict, Continuity and Change in Popular Politics, 1830-52," Social History 21 (October), 265-80.

Honeyman, Katrina. 1982. Origins of Enterprise: Business Leadership in the Industrial Revolution. Manchester: Manchester University Press.

Huberman, Michael. 1995. "Piece Rates Reconsidered: The Case of Cotton," Journal of Interdisciplinary History 26 (Fall), 393-417.

Huberman, Michael. 1996. Escape From the Market: Negotiating Work in Lancashire. Cambridge: Cambridge University Press.

Jacoby, Sandford. 1997. Modern Manors: Welfare Capitalism Since the New Deal. Princeton: Princeton University Press.

Jewkes, John and E. M. Gray. 1935. Wages and Labour in the Lancashire Cotton-Spinning Industry. Manchester: Manchester University Press.

Joyce, Patrick. 1980. Work, Society and Politics: The Culture of the Factory in Later Victorian England. Brighton: Sussex, 1980.

Joyce, Patrick. 1991. Visions of the People: Industrial England and the Question of Class, 1848-1914. Cambridge: Cambridge University Press, 1991.

Kahan, Dan M. 1996. "What Do Alternative Sanctions Mean?" University of Chicago Law Review 63 (Spring), 591-653.

Kanemoto, Yoshitsugu and W. Bentley MacLeod. 1992. "The Ratchet Effect and the Market for Secondhand Workers," Journal of Labor Economics 10 (January), 85-98.

Kruse, Douglas L. 1993. Profit Sharing: Does it Make a Difference? Kalamazoo: W.E. Upjohn.

Lazarus, Richard S. 1991. Emotion and Adaptation. New York: Oxford University Press.

Lazear, Edward P. 1995. Personnel Economics. Cambridge, Mass.: MIT Press.

Lazonick, William. 1990. Competitive Advantage on the Shop Floor. Cambridge, Mass.: Harvard University Press.

McIvor, Arthur J. 1996. Organized Capital: Employers' Associations and Industrial Relations in Northern England, 1880-1939. Cambridge: Cambridge University Press.

Mathewson, Stanley B. 1969. Restriction of Output Among Unorganized Workers, 2nd ed. Carbondale: Southern Illinois University Press.

Miller, Gary J. 1992. The Political Economy of Hierarchy. Cambridge: Cambridge University Press.

Nelson, Daniel. 1975. Managers and Workers: origins of the New Factory System in the Unites States, 1880-1920. Madison: University of Wisconsin Press.

Piers, Gerhart and Milton Singer. 1971. Shame and Guilt Cultures. New York: Norton

Rose, Mary. 1990. "Paternalism, Industrial Welfare and Business Strategy: Britain to 1939," in Erik Aerts et al., eds., Liberalism and Paternalism in the 19th Century. Leuven: Leuven University Press.

Roy, Donald. 1952. "Quota Restriction and Goldbricking in a Machine Shop," American Journal of Sociology 57 (March), 427-42.

Savage, Michael. 1987. The Dynamics of Working Class Politics: The Labour Movement in Preston. Cambridge: Cambridge University Press.

Smith, R. 1961. "An Oldham Limited Liability Company, " Business History 4 (January), 34-53.

Stedman Jones, Gareth. 1983. Languages of Class: Studies in English Working Class History, 1832-1982. Cambridge: Cambridge University Press.

Sykes, R. A. 1980. "Some Aspects of Working Class Consciousness in Oldham, 1830-1842," Historical Journal 23 (March), 167-80.

Taylor, Peter. 1995. Popular Politics in Early Industrial Britain: Bolton 1825-1850. Bodmin: Keele University Press.

Temin, Peter. 1997. "Is it Kosher to Talk About Culture," Journal of Economic History 57 (June), 267-87.

Thompson, Edward P. 1968. The Making of the English Working Class. Harmondsworth: Penguin.

Toms, Steven. 1994. "Financial Constraints on Economic Growth: Profits, Capital Accumulation and the Development of the Lancashire Cotton-Spinning Industry, 1885-1914," Accounting Business and Financial History 4 (no. 3), 363-83.

Toms, Steven. 1998. "Windows of Opportunity in the Textile Industry: The Business Strategies of the Lancashire Entrepreneurs, 1880-1914," Business History 40 (January), 1-25.

Tyson, R.E. 1962. "Sun Mill: A Study in Democratic Investment," unpublished M.A. thesis, University of Manchester.

Winstanley, Michael. 1993. "Oldham Radicalism and the Origins of Popular Liberalism," Historical Journal 36 (no. 3), 619-43.

Wood, G.H. 1910. The History of Wages in the Cotton Trade During the Past Hundred Years. Manchester: Hughes.

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