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**INSCRIBING THE WORKERS: AN EXPERIMENT IN
FACTORY DISCIPLINE OR THE INCULCATION OF
MANNERS?**

by

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INSCRIBING THE WORKERS : AN EXPERIMENT IN FACTORY DISCIPLINE OR THE INCULCATION OF MANNERS?

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Abstract

The establishment of the factory system during the beginning of the Industrial Revolution created a demand for labour. Labour that was unused to the confines and rigours of factory life. In an attempt to encourage punctuality and conscientiousness the industrialists of the late eighteenth century resorted to a number of practices designed to encourage their employees to give up their old habits and take on a new rhythm of life tied to the demands of the factory. At the same time, the guiding principle of improvement of product and factors of production led many industrialists to devote considerable energy to improving their human capital.

Samuel Oldknow was one of these industrialists and this paper is concerned with his attempts to exert discipline through the surveillance and recording of the behaviour and output of his employees.

November 1995

INSCRIBING THE WORKERS : AN EXPERIMENT IN FACTORY DISCIPLINE OR THE INCULCATION OF MANNERS?

Introduction

The focus of the manufacturers of the second half of the eighteenth century was the improvement of their product and the means of production. We note the experiments of James Watt to improve the steam engine, the reorganisation of the potteries by Josiah Wedgewood, the expansion of the canal system to provide cost effective transport. We note as well the invention of machinery to increase efficiency, machines such as the spinning jenny, the mule and the water-frame that so revolutionised the cotton industry. The weak link in the chain of production appears to have been the people employed by the industrialists, who did not possess the same zeal for output as their employers. That the workers posed a problem caused Wedgewood to state, in a letter to his partner, Thomas Bentley, in 1769, that one of his aims was to "... make such *machines* of the *Men* as cannot err ..." [quoted in McKendrick, 1961, p34].

The industrialists had the task of convincing and convicting their employees to develop new work habits, a new rhythm of life as it were, tied to the factory bell. This paper considers the attempts of one industrialist, Samuel Oldknow, to 'improve' his employees by recording not only their production but also their behaviour.

One of the major tasks of the early factory masters was the recruitment and training of their labour force. There were no suitable models on which to base their labour practices. They had to develop methods by trial and error. Problems were dealt with as they arose and so a practice of industrial relations evolved. The foremost problem was one of recruitment. Workers were displaced from the land but to move to the towns or to factory sites was a major dislocation. Pollard discussed this dislocation for the worker and challenge for the factory master when he wrote:

The worker who left the background of his domestic workshop or peasant holding for the factory entered a new culture as well as a new sense of direction. It was not only that the 'new economic order needed ... part humans: soulless, depersonalised, disembodied, who could become members, or little wheels rather, of a complex mechanism'. It was also that men who were non-accumulative, non-acquisitive, accustomed to work for subsistence, not for maximisation of income, had to be

made obedient to the cash stimulus, and obedient in such a way as to react precisely to the stimuli provided.

[Pollard, 1965, p 190]

The work was uncongenial and the fact that many of the early factories were modelled on workhouses or prisons did not add to their attractiveness. Factory life meant a loss of the old culture of the cottage industry and seasonal work, and flexible working hours. The new factory culture tied the workers to an alien rhythm of work, often necessitated new surroundings, new friends and the breaking of old ties with the uncertainties of being cast adrift.

The paradox in the late eighteenth century was that potential workers noted a shortage of jobs while employers complained of a shortage of hands. One of the reasons for this state of affairs was the adversity of the workers to the new discipline and the reluctance of the employers to tolerate the old work habits. There was also a shortage of people with the training to meet the demands of new technologies.

Industrial discipline was a new concept and called for as much innovation as the technical advances. The problem was approached from three angles [Pollard, 1965]:

- Unsatisfactory work was punished by fines, dismissal or beatings. Because of the large number of children employed, beatings were commonplace. The main threats were fines and dismissal, but in times of labour shortage, dismissal did not carry much weight. A common technique was the use of the 'blacklist'; workers who upset one employer were blacklisted and found it almost impossible to get employment with another employer. Combinations of employees were also forbidden by law and meant dismissal¹.
- Various inducements were put forward to encourage productivity. For example, piecework was a common way of allowing the workers to earn more and at the same time produce more. Some industrialists were innovative in their attempts at encouraging the employees. Arkwright gave distinguished clothing to his best workers, Owen had his 'silent monitor', Wedgwood appealed to his employees by stressing their common interests, while Oldknow, Dale and Gregg tried to create settled communities.
- The view of the employers of the time was that workers were their subordinates because they were less well endowed with the

¹ The Combination Acts (1799-1800) strengthened existing legislation against trade unions [Thompson, 1963; Ashton, 1964].

essential qualities of industry, ambition, sobriety and thrift. As long as this remained the case then they could not be expected to be influenced by moral persuasion or appeals to their better nature. So there was an attempt to indoctrinate the workers with bourgeois values. This is evidenced by the support given by employers to churches and the Sunday School movement, both to increase the general level of education and to inculcate a moral sense. Drinking was, and continued to be, a major problem, so it received major attention in an attempt to reduce it. The attention to developing 'respectability' was an attempt to develop a sober, docile worker in tune with the aims and ambitions of the industrialists.

It was necessary to convince the workers that through a combination of diligence, punctuality, discipline and hard work they could better their lot in life and secure greater wealth and enhanced social position as well as securing a better future for their children. What was needed was to make the workers ambitious [Thompson, 1967].

The employers were also often responsible for the civil law in their communities, often sitting on the bench as magistrates. This gave them extra power over the employees, to limit the employees' mobility and activities. That industrial relations were less than ideal has been summed up by Pollard:

Because of the nature of eighteenth century British society within which modern industrialism arose, because of the bitterly competitive nature of the market facing the typical manufacturer, because of the alienation of work involved in the change, and because, after all, they faced employers as enemies within the distributive system of the capitalist economy, the modern industrial proletariat was introduced to its role not so much by attraction or monetary reward, but by compulsion, force and fear.

[Pollard, 1965, p 243]

Not all employers had such a cynical view of their employees, men such as Oldknow, Owen and Watt jnr saw themselves as providing a benefit for their employees by introducing them to a new way of life that would provide greater rewards for them and their families.

The Virtue of Punctuality

During the course of the eighteenth century, the passage of time came to be viewed in a new light and the schedule began to dominate. No longer was the measurement of time considered to be related to physical phenomena such as the rising and the setting of the sun.

The factory bell signalled the start of the day rather than the rising of the sun. Natural occurrences were not sufficient to regulate the increasingly ordered life that was required by the new methods of production. It was the mechanical clock that had reached a level of development that could provide the synchronisation required by industry. It was the clock that focussed peoples attention on the passage of time and its implications for production and productivity [Landes, 1983; Rifkin, 1987]. Describing the tension that arose between employers and employees Landes noted:

The contradiction in the eighteenth century between time-free (domestic workers) and time-bound (employers and their agents) gave rise to growing tension as demand increased. There is perhaps nothing that hurts more in business than profits forgone, and the unwillingness of cottage workers to devote themselves unremittingly to their tasks was a growing source of frustration to the merchant-manufacturers who could not fill their orders.

[Landes, 1983, p 228]

The complex, highly centralised technology being installed made it necessary to ensure co-operation amongst a number of people as well as to establish and maintain regular hours of work. Although not in all cases, for instance in the emerging iron and steel industry it was common for the same team to superintend a blast furnace firing which might have run for more than twenty four hours without a break [Hammond & Hammond, 1925]. Most factories required regular hours of work and so became a world of bells governed by the clock. It was the mechanical clock that changes the perception of time and set the pace for work, as Rifkin points out:

To become 'regular as clockwork' became the highest values of the new industrial age. Without the clock industrial life would not have been possible. The clock conditioned the human mind to perceive time as external, autonomous, continuous, exacting, quantitative, and divisible. In so doing it prepared a way for a production mode that operated by the same set of temporal standards.

[Rifkin, 1987, p 103]

Time was to assume a linear orientation rather than the cyclical orientation it had always had. Science had freed man from the demands and regulation of nature and of God and made the future a secular frontier to be tamed by human ingenuity and determination. This move was aided by the educational system, such as it was, and the schoolroom became the training ground for the factory. The schedule became important if not more important than reading, writing and arithmetic [Thompson, 1967]. The schedule imposed an

order which accorded with the philosophies of the managers. Order and regularity were paramount and ...

(i)inside the schoolroom, astride the church dais, on the factory floor, the new urban culture was being entrained to a new temporal catechism. The clock and the schedule were being indelibly imprinted into the consciousness of the culture.

[Thompson, 1967, p 112]

In tune with the rationalism of the factory masters this new concept of time became a requirement and punctuality a virtue. From the point of view of the factory managers, how could it be otherwise. Where workers were employed on day rates then a starting and stopping time had to be assigned, where the workers handed their work on to others then this work flow had to be synchronised. As the employers were paying for time they expected to receive value in return. The cyclical nature of agriculture with its periods of intense activity and inactivity would not do for the factory for time had to be used in the same way as any resource, in the most efficient manner possible.

Common men and women were exposed to time schedules for the first time when they entered the factory. It became a real and intimate part of their lives. They were committed to work for some thirteen to sixteen hours a day for six days a week without let up. Records were kept of their adherence to the schedule. Samuel Oldknow recorded attendance in periods of a quarter of a day, the Crawley iron works kept a daily time sheet for each employee to the minute [Risfin, 1987]. The schedule ordered every minute of the worker's lives once they had entered the factory gate. It was enforced by a system of penalties and rewards to encourage conformity.

There appears to have been considerable resistance to this time discipline with the institution of 'Saint Monday'² persisting in many

² In many areas Monday was traditionally regarded as a holiday after attending to religious duties on Sunday. Often Monday was spent at the ale-house, this was not a problem when work was conducted on the putting-out basis because the workers were able to make up the time later in the week [Reid, 1976; Thompson, 1967]. Thompson [p 78]cites a poem by George Davis written in 1790, in

Birmingham and entitled *Saint Monday; or, Scenes from Low-Life*:

When in due course, SAINT MONDAY wakes the day,
Off to a *Purl-house* straight they haste away;
Or, at a *Gin-shop*, ruin's beaten road,
Offer libations to the tippling God:
And, whilst the gen'rous liquor damps their clay,
Form various plans for saunt'ring out the day.

places until the middle of the nineteenth century [Reid, 1976; Thompson, 1967]. The lure of the old ways was still very strong, however the schedule eventually won imposing a time discipline concept that was accepted by future generations.

Samuel Oldknow the Man

The obituary of Samuel Oldknow published in *Gentleman's Magazine*, November 1828, described him thus:

Few men who have of late quitted this transitory scene have led a life of greater industry and more active benevolence, or died more universally lamented than this individual. In the manufacturing, commercial, and agricultural world he has been known for half a century as a man of enterprise and skill coupled with the most unremitting industry and honourable integrity.

In describing his character further the obituary records how

(i)n private life, he had not an equal in the courteous urbanity of his manners. An unvarying, cheerful, and benevolent countenance, with which the heart kept pace, accompanied and supported him through every vicissitude of life. The voice of slander never passed his lips, for he was guided by that great charity which "envieth not", and "thinketh no evil". He was a steady (not a bigoted) friend to the Established Church; regular with his whole establishment, in his attendance in the house which he had built, and exemplary in the performance of every religious duty. To the poor he was charitable in the most extensive sense of the word, and a very "father to the fatherless, and him that had none to help him".

[p 469]

That Oldknow was held in high esteem is attested to by the three thousand or more people that attended his funeral [*Stockport Advertiser*, 26/9/1828; Unwin, 1924], and the buildings and canal that he built for his community that still stand today.

.....
 Perhaps at work they transitory peep,
 But *vice* and *lathe* are soon consigned to sleep:
 The shop is left untenanted awhile,
 And a cessation is proclaimed from toil.

From his achievements and accounts of his character [Unwin, 1924; Oldham, 1990; Giles, 1984], Oldknow appears as a genial man who managed to endear himself to everyone. Even though he exhibited a degree of incompetence in his financial affairs his friends were prepared to support him, to the extent of many tens of thousands of pounds in the case of the Arkwrights [Hume, 1969; Fay, 1937; *Manchester Weekly Times*, 29/4/1892].

From 1782 until about 1796 Oldknow operated a number of businesses, involved with cotton spinning and weaving, in several different centres eventually concentrating all his efforts at Mellor in Derbyshire, where he remained until his death in 1828.

The Establishment of Business at Stockport

Stockport was well established in the textile trade in the 1780s. Previously having a number of establishments involved in silk spinning and weaving, cotton was becoming popular with the manufacturers of the town. A number of water driven cotton spinning mills had been established and there were many weavers in the town and nearby districts. It was also close to the market in Manchester as well as having suitable water for the driving of water wheels.

Stockport had many advantages for an entrepreneur wishing to become established in the textile industry because water power and buildings were available, as well labour trained to work in the silk industry could easily convert to other fibres such as cotton. Other advantages in establishing in a town with a flourishing textile industry came from the presence of people skilled in building and repairing machinery, people with the ability to organise labour and a higher degree of social mobility between the classes [Unwin, 1924].

It was to this environment that Oldknow came in early 1784. Discussions with Arkwright³ in January 1784 led to him advancing Oldknow £3000 at 5% to enable the latter to expand production, and so by the beginning of February Oldknow had some 90 weavers calling at his Stockport warehouse [Unwin, 1924]. He appears to have opened this warehouse immediately on deciding to set up business in

³ Arkwright(1732-92) had established several spinning mills and supplied twist to Oldknow, he was also a good friend to Oldknow because both Arkwright and his son supported and lent money to Oldknow at various times [Unwin, 1924; Mantoux, 1964; Fay, 1937]

Stockport. In July 1784, Oldknow acquired a house and another warehouse in Upper Hillgate⁴, Stockport, which he made into his headquarters [Unwin, 1924; Oldham, 1990].

The business in Stockport continued to expand; by October 1784 he had 100 weavers and by Autumn 1786 he was employing over 300 weavers possessing over 500 looms [Oldham, 1990]. Unlike others in the area, Oldknow followed his practice at Anderton using a variation of the 'putting-out' system. He conducted this business in the same way as the one at Anderton with the weavers being provided with the material to be woven. The records show that the weavers were employed on a piece-work basis with Oldknow supplying careful specifications of the work to be done. They were governed strictly by this specification and were not able to use their initiative as would have been the case under the old system. The reeds and gears, necessary to weave the specified cloth, were supplied by Oldknow. He also supplied the weavers with the looms to make figured muslins, for a rent of 6d. per week [Unwin, 1924; Oldham, 1990].

Oldknow was by this time entering a boom period, so he turned his thoughts to other branches of the business. He employed some 20 people directly in his establishments at Anderton and Stockport. These people were involved in attending to the spinners and weavers who called for materials or brought back product. It seems that some of these people were employed in preparing the warp and finishing the cloth. Oldknow still depended, however, on other firms for bleaching, printing and dyeing. The profits he was making provided the stimulus to establish a bleaching works at Heaton Mersey, with his brother Thomas as managing partner. These works were run in close co-operation with the Stockport establishment [Unwin, 1924; Oldham, 1990; Peel, 1966].

Expansion at Stockport

From the records it appears that sometime in early 1787, Oldknow organised, at Stockport, the processes of warping, sizing, and muslin trimming. These operations were central to the support of the weavers and seem to have been organised on a factory basis rather than employing outworkers. The final appearance and saleability of the cloth depended on how it was finished and trimmed, so to ensure consistency of finish this process was initiated in the warehouse and employed 81 women on some 30 finishing and several darning frames [Unwin, 1924].

⁴ SO 773 gives details of the taxes levied on this premises in April 1785 which includes £1-2-6 for window tax.

These were good years for Oldknow, a point recognised by his contemporary Robert Owen when he wrote of Oldknow in his *Life of whom*

... it was known had not long before made seventeen thousand pounds in each of two successive years.... He made these profits in the manufacture of muslin, while he purchased yarn from the cotton spinners.

[1857, p 40]

Owen, who does not appear to have liked Oldknow, continued and wrote of Oldknow's next venture that he

... thought the spinners were getting great profits, and he was not, like many others, content to do well or very well, as he was doing, — but being ambitious, he desired to become a great cotton-spinner, as well as the greatest muslin manufacturer.

[1857, p 40]

Arkwright's patent for spinning machines using rollers lapsed in 1785, however, Crompton's mules⁵, which were not subject to a patent and had been continually improved, were more widespread. Coupled with improvements in the carding machine and the preparation of rovings, great numbers of manually operated mules had been built. It was from spinners operating these machines that Oldknow purchased his fine thread. From about the beginning of 1787 he was obtaining medium counts of warp as well as much of his jenny-spun weft from the numerous small spinners he employed in the Stockport district [Giles, 1984]. Oldknow's next step was to consider building his own spinning mills.

Spurred by the high profits of 1786 and 1787 Oldknow developed his 'grand plan' which would

⁵ Until about 1785 spinning was dominated by the spinning jenny and Arkwright's water-frame but while they had the advantage of being able to produce multiple threads simultaneously neither could spin really fine threads. Crompton's mule had gone through a number of improvements and was able to produce a fine thread on multiple spindles and soon out-numbered the water-frame and jenny in terms of spindles being used [Edwards, 1967].

... make Stockport the organising centre for the manufacture of muslins and calicoes, finding employment for 1000 weavers in a radius of five to six miles, and another 1000 workers in several factories in the area. The finer counts of yarn would be spun by 50 mule spinners at a new mill being erected on his land at Hillgate in Stockport, which would also be equipped with machines for winding, warping and sizing. Finishing processes would continue to be carried out at the premises at Hazel Grove and Waterside, Disley, and bleaching, dyeing and printing at Heaton Mersey. A mill was to be built at Mellor where the lower counts of yarn would be spun on Arkwright type water-frames or "throstles".

[Oldham, 1990, p 8]

Meanwhile he was in the process of establishing a spinning mill at Stockport. Ambition and the desire to ensure a supply of yarn of the right quality and the right price, led to the building of this mill. His fellow cotton manufacturers in the town were turning to the factory system for yarn production and there was much competition for the available water-power of the two rivers, the Mersey and the Goyt, that passed through Stockport. Oldknow overcame this problem by later installing a steam engine.

Oldknow began spinning operations in Stockport in October 1789 probably in a former silk mill, known as the "Carrs" which he rented [Unwin, 1924; Fay 1937]. It does also seem that he placed ten winding machines in these premises to try and overcome quality problems [SO 786]. Winding was usually done by children and old people, however, his weavers had been complaining of 'lumpy thread' so it seems he decided to exercise greater control by bringing winding under the one roof. That he still employed children to do the work is evidenced by the low wages he paid, from 1/3 to 1/9³/₄ per week [SO 820; Giles 1984]. The winding machines would have been driven by the steam engine available in these premises [Giles, 1984].

Recording Employees

In common with other manufacturers of his time [Owen, 1857], Oldknow had problems with his employees. He seems to have been held in high regard by them and certainly went out of his way to find employment for the husbands and fathers of the women he employed in the mill at Mellor and he was regarded as one of the more enlightened employers [Unwin, 1924; Fay, 1937; Ashton, 1964; Mathias, 1969; Oldham, 1990]. But, people were not fully conversant

with the idea of working, together, under the one roof for six days a week and discipline was often a problem.

Cutting Frames

Muslin trimming was one of the first processes to be organised by Oldknow on a factory basis, it is thought that this activity commenced about late 1787. Unwin described the processes of the Cutting Branch wherein ...

(t)he most important work carried on comprised the trimming of the "float" or figures of the pattern woven, and the cutting of ballasore and romals into handkerchief size. The apparatus of this department was simple, consisting of 30 finishing frames and several darning frames. The staff comprised 81 girls and a foreman or forewoman. The names of the girls suggest that members of one family often worked together.

[Unwin, 1924, p 109]

There are two records of this department still in existence. The first of these, the "Cutting Frames Book" [SO 759], records the work the employees were engaged on, the time they started and the time they finished. The document does not state the year but gives the day and the month. It is thought that it could apply to 1788, shortly after the commencement of this department. An example of a typical page, relating to cutting frame No. 13, follows.

No. 13				
Shuttleworths 2 Sisters	March 19 th	Chains	March 22 9	OC
Jane Deranley	10 Clock			
Nancy Smith				
Shuttleworths 2 Sisters	March 22	Chains	March 27 4	OC
Nancy Moorhouse	9 OC			
Nancy Smith				
Nancy Shuttleworth	March 27	Bromelys	March 29 2	OC
Nancy Smith	4 OC			
Nay Moorehouse				
Same as above	March 29 2	Dice	April 5 th 3	OC
	OC	6/4		
Nany Moorehouse	April 5	Hard Spades	April 18 th 10	OC
Fany Allen	3 OC			
Cooks 2 Sisters	April 18	Great Soft	do 24 2	OC
S Blegdean	10 OC			
L Newton				

105	Same -----	April 24 2 OC	Great +	May 9 th 10 OC
	Mary Taylor	May 9 th	Chains	May 16 10 OC
	Betty Marsey	10 OC		
	Lowes Newton &	May 18	hard spades	May 28 th 10 OC
	Sarah Blagdean	10 OC		
	Same do	May 28	Pepper Box	June 15 th 9 OC
		10 OC		
	Same	June 15 th	Do	July 10 Night
		9 OC		
		July 11 Morning		July 23 4 OC
	Jane Polpbry	July 23 ^d	Soft Spaces	August 2 Night
	Ann Beech	4 OC		
	Mary Sutton			
	Same	August 3	Double Spades	Do 13 3 OC
		Breakfast		
	4 Newlauney	Sept 6 Morning	Opened	Septm 14 10 OC
	Same	Sept 14 10 OC		Do 22 4 OC
	Hanah Brown & Marget Kerry	Sept 22 4 OC	Eyes	Oct 8 11 OC
	Same	October 8 11 OC		Do 16 10 OC
	Betty Davis & Hanah Hyde	Do 16 10 OC		Do 26 4 OC

[SO 759]

This document provides a list of the employees in the department, the work they were engaged on, the time the job was commenced and the time it was finished. This book ties the person to the work and provides a continuous record of the nature of the work being done on this particular frame, as well as the amount of time spent on doing it. The book also provides a check on quality, any complaints could be traced back to the individual worker. A record of the employees' behaviour as they went about their duties was recorded in the 'Report Book'.

Report Book

The way these women went about their work was also apparently of concern, because the women listed in the "Cutting Frames Book" also appear in the "Report Book" [SO 815], referred to in Unwin as the

"Disgrace Account". The book is in very poor condition and covers some six weeks in 1787. It appears to be a record of the behaviour of the women employed in the cutting frames department. The record on each page covers a two week period, which appears to be the normal practice in Oldknow's accounts. At various places a 'o' appears which Unwin thinks could refer to a mistake. Not all the workers have marks against their name, which tends to support Unwin's view. Some of the women have a comment as to their behaviour. An example of a number of entries is below.

June 10												
	M	T	W	Thurs	Friday	Sat	M	T	W	T	F	S
Phany Marsey	oo		o		oo	o	oo	o				
Nancy Moorhouse	ooo		o o	oo	careless hole	o	oo	ooo	o	o	ooo	o
Betty Waterhouse	o											
Ann Broadhurst								ooo		oo	oo	oo o
Jane Palphry ⁿ	oo	oo		oo	oo							
Betty Whitehead	oo				ooo	oo	oo					
Mary Dernley		o	ooo	o	oo		o	ooo	o	oo	o	
Phany Do	oo		o									
Jeny Do								o	o			o
Nancy Edwards												
Betty Do												
Sarah Do	oo		o		o	oo		oo	ooo	o	oo	oo
Nancy Inggason	oo	o	sacy	o			o					
Ann Beech	oooooo o						oo	ooo	ooo	oo	o	
Lowes Newton	oo		o			oo	o	oo				
Betty Smith			o									
Nan ^y Do		o	o	oo careless hole		o	ooo	o				
Nanc ^y Shuttleworth	ooo	oo		o		o	oo	o	very noisy		oo	oo
Nancy Baslow	oo	oo	o		oo	o	ooo	oo	o			oo o
Mary Do	o	o	oo	oo	o		o	oo		o careless hole	careless hole o	

[SO 815]

Similar to the 'silent monitor' described by Owen, it seems that this record was concerned with employee behaviour while at work. Unfortunately there is no indication of how this record was used or how long the practice continued. However, it does indicate the concern shown towards worker output and performance. Some workers show a much better performance than others in as much as they have no marks against their name. Unfortunately there appears to be no account of the effect of this inscription so we are left in doubt as to its use. It is interesting to note that in one of his first attempts

at collecting people together in a factory, Oldknow deemed it important to record and be informed about the behaviour of his employees. The employees engaged on this work were young people and by making their behaviour visible to their employer it may have been hoped that they would pay more attention to their behaviour.

The practice of recording behaviour does not seem to have been carried on in other parts of his organisation. However it seems to have been common practice to record work by the person rather than the machine being supervised, this practice being illustrated in the records relating to warping.

Warping

Warping began on a factory basis in 1787 and a series of books record the production. The record is by no means complete, however there is enough information to gain an impression of how the work of the warpers was written down. The warpers prepared the warp for the weavers by winding it onto a beam using a machine. This was important work because it determined the pattern to be woven. The weaver then attached the beam to the loom and the warp was unwound in the weaving process.

The existing records constitute a number of bound books, mainly in poor condition, some books appear to relate to an individual machine while others cover a number of machines. The records show that one person was in charge of each warping mill and indicate the work done by each machine and hence each operator. Unwin states that the warpers were paid 2/- per day, this would explain why the account mentions only quantities. The account for each worker carries a strict specification of the pattern of the cloth to be woven as well as number for each job.

The first book begins in May 1787 and relates to Mill No. 7, which would have been at Stockport. The book relating to Mill No. 10 begins on May 25, 1787 [SO 761(ii)] and describes the work done by Robert Sutton, setting up the warp for the weaving of night caps.

Thomas Edwards working on Mill No. 1 had more variety to contend with, setting the warp for a variety of muslins. An example [SO 761(i)] follows showing some of the work done on this mill in July and September 1788, more than a year after the warping process had been incorporated into the factory.

Thomas Edwards N1

Date	N ^o	Reed	Width	Sort	Cuts	Beers	Ends	Dents	Fine Twist	Coarse twist	Pattern
1788											
June 30	44	72	7/8	Red Romals	4	19	118	59	46	43	New 54.1.1.1.1.1
July 1	45	60	4/4	Jacsonats	4	42 15	55	27½	48		
2	46	34	6/4	plain apron	4	35 23½	55	27½	24		
3	47	66	4/4	Hand	4	43½	55	27½	62	27	7
Sep 8	124	64	7/8	R&P B ^d Romals	4	26 15	72	36	42	40	15.1.1.1 129
9	125	64	7/8	Do	4	26 15	72	36	42	40	15.1.1.1.129
	126	68	5/4	Gold Stripe	2	16 Stripes			68	30	Bleach
				Pale to Do	80	ends	Gold				
11	127	68	4/4	Stripe	4	32	Stripes		70	29	
	128	68	4/4	Cord Coh6	4	64 22	62	31	70	25	20.1.4.1 [SO 761(i)]

This appears to be a record of the person rather than the output of the machine. The machine is not referred to as an entity involved in production, but the operator is. The machine is tied to the man rather than the man being tied to the machine. This could have been an attempt at ensuring quality by keeping the worker responsible for the work. Each warp was given a number, which would allow cross-checking if questions relating to quality arose, thus ensuring that the person responsible for the individual piece of work was made aware of faults in their workmanship as well as enabling a record to be maintained.

As factory production became more established and more people became involved it was still deemed important to tie production to a person rather than a machine or a process, yet there was no further attempt to record their behaviour. This can also be seen in the accounts of spinning in Stockport.

Spinner's Accounts - Stockport

By 1793 Oldknow was heavily involved in spinning in the new Hillgate factory. His new Boulton and Watt steam engine allowed him to operate four rooms of spinning machinery. It is interesting to note that these records were concerned not only with the output of each machine, but also, with the output of each man. An example of this production record for the week of April 20 1793 for all the spinning machines (most probably mules) emphasises the output of the operators.

April 20 1793 Spinners Weekly Account

N of Frame	Spinners Name	N ^o of Spindles	Weight	Counts	Hanks
1	W Allcock	256	13 „ 2	55	721
2	W Perkins	256	31 „ 12	42	1330
3	Jos Bealy	256	23 „ 4	55	1275
4	Ros Fivini-fire	256	18 „ 10	57	1060
5	W Bealy	256	29 „ 6	52	1544
6	H Jones	256	32 „ 8	35	1138
7	Jon Henshall	240	28 „ 2	56	543
8	W Atkinson	240	27 „ 9	53	1438
9					
10	Jno Ryle	108	4 „ 12	82	370
	First Room				9819

April 20 1793 Spinners Weekly Account

N of Frame	Spinners Name	N ^o of Spindles	Weight	Counts	Hanks
11	Owen Neale	144	15 „ 4	73	1040
12	Jno Dilworth	144	10 „ 11	77	827
13	Jno Mills	144	7 „ 15	79	630
14	Geo Higham	144	7 „ 15	77	609
15	W ^m Bucktrout	144	6 „ 15	73	504
16	W ^m Ward	144	7 „ 3	76	547
17	Ric Fleet	144	7 „ 2	77	548
18	Jno Boveton	144	9 „ 8	83	787
19	Isaac Fogg	144	8 „ 1	75	605
	Second Room				6097
20		120			
21	Isaac Stafford	120	1 „ 4	114	141
22		120			
23		120			
24		120			
25		120			
26		120			
27		120			
28	Charles Bullock	120	6 „ 1	81	494
29	James Spearpoint	120	5 „ 14	88	556
30		160			
31		160			
	Third Room				1191
32		120			
33		120			
34		120			
35	Joseph Williamson	120	7 „ 14	76	447
36		120			
37		120			
38	John Edwards	120	10 „ 10	65	693
39	Richard Fox	160	2 „ 7	119	291

40	Joseph Hybert	160	4 „ 11	116	541
41	Isaac Becket	160	5 „ 0½	114	576
42	Thomas Naden	160	1 „ 15	108	210
Fourth Room					2758

April 20 1793 Spinners Weekly Account

N of Frame	Spinners Name	N ^o of Spindles	Weight	Counts	Hanks
43		120			
44	Robert Cain	120	7 „ 9	84	635
45	Tho ^s Rogers	120	3 „ 3	75	240
46	Geo Sykes	120	8 „ 1	75	600
47	Charles Wilkinson	120	7 „ 12	67	510
48	Geo Burton	120	3 „ 12	80	300
49	Ric Fivinifire	120	5 „ 3	76	292
50	Thos Salsbury	120	3 „ 10	79	288
51		120			
52		120			
53	W ^m Horton	120	6 „ 8	56	367
Fifth Room					3332
Fourth Room					2758
Third Room					1191
Second Room					6097
First Room					9819
					<hr/> 23197
					all the rooms

[SO 769]

Fifty three spinning frames with a total of 7740 spindles were available, however, all of this capacity was not used. Earlier in his career as a spinner Oldknow was responsible for counts of above 120 hanks to the pound, however, these records show that the fineness of the yarn had declined somewhat. As time went by the fineness of the yarn spun continued to decline. However, this decline could be attributed to the changing nature of the demand for cotton cloth as well as the different technology being employed.

The record of spinners for the rest of the year continues along similar lines with the change to fortnightly summaries at the end of June. At a glance Oldknow was made aware of the production of each machine and each machine attendant. A degree of skill in operating these machines was required which could account for the operator's names being included in the account, which also provided a means of control where the output of the spinners could be compared with each other and with expected output. Later on at Mellor, when different machines were operated by women and children, the practice of recording operator's names seems to have been discontinued. Quality

was not so much dependant on the operator but more on the machinery at Mellor.

As Oldknow's factories became more established the process of recording the time became more formalised and by the time the Mellor mill was established attendance was recorded in a series of time books.

Time Books

The time books [SO 816] consist of fragments of four books used to record the attendance of factory personnel, covering the period 1793 - 1795. Attendance was recorded in quarter day units, with a mark made four times a day⁶. Employees were paid fortnightly, at a daily rate based on their attendance. These records relate to Mellor and include spinners, apprentices, carders, rovers & drawers, smiths, tilers, plasterers, reelers, makers up, sizers, warpers & winders, cutters. The following is an example of the attendance of some of the spinners for the fortnight beginning on Saturday 21 December 1793.

Spinners Continued

Dec ^{br} 1793 & Jan ^y	S 21	M 23	T 24	W 25	T 26	F 27	Time Worked	S 28	M 30	T 31	W 1	T 2	F 3	Time Worked
W ^m Wardle	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
Tho ^s Hall	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
W ^m Lomas	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
Jos ^h Clowes	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
John Cuttler		X	XX		XX	XX	3½	XX	XX	XX		X	XX	8
John Halden	XX						1					X	XX	2½
Jon ⁿ Davenport	XX	XX	XX		/X	XX	4¾	XX	XX	XX		X	XX	9¾
Alex Lewis			XX		V		1½							1½
Ann Do	XX	XX	XX		X/	XX	4¾	XX	XX	XX		X	XX	9¼
G Garlick	XX	XX	XX		XX	X	4½	XX	XX	XX		X	XX	9
Sarah Brindle	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
Mary Do	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
Martha Do	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½
James Do	XX	XX	XX		XX	XX	5	XX	XX	XX		X	XX	9½

[SO 816]

⁶ Norton [1894] recommends a similar system of marks for recording attendance in terms of quarter days. Garcke and Fells [1893] recommend a similar scheme although both of these books were published a century after these records were made.

Generously, the employees did not have to report for work on Christmas Day and New Year's Day and they were even allowed to start work late on the second of January, presumably recognising the importance of the previous day's celebrations. They were not paid for this time off though. In 1795 the books list "Night Spinners", so they must have been working a night shift.

Unbecoming behaviour seems to have been a problem for some years after the Mellor mill was established as indicated by the following notice Oldknow had printed:

WHEREAS

The horrid and impious Vice of profane CURSING and SWEARING,- and the Habits of Losing Time,-and DRUNKENNESS,-are become so frequent and notorious; that unless speedily checked, they may justly provoke the Divine Vengeance to increase the Calamities these Nations now labour under.

NOTICE is hereby given,

That all the Hands in the Service of

SAMUEL OLDKNOW

working in his Mill, or elsewhere, must be subject to the following RULE:

That when any person, either Man, Woman or Child, is heard to CURSE or SWEAR, the same shall forfeit One Shilling,-And when any Hand is absent from Work, (unless unavoidably detained by Sickness, or Leave being first obtained), the same shall forfeit as many Hours of Work as have been lost; and if by the Job or Piece, after the Rate of 2s. 6d. per Day,-Such Forfeitures to be put into a Box, and distributed to the Sick and Necessitous, at the discretion of their employer.

MELLOR, 1st December, 1797.

[SOP Box 5]

As the method of organising production became more established and routine Oldknow appears to have become more interested in the overall picture rather than the performance of the individual.

Conclusion

In his latter years at Mellor, Oldknow was instrumental in establishing a community from which he drew his employees. At

Stockport he employed the townspeople and had little influence in their daily lives away from the mill. However, like many of his era Oldknow had an abiding interest in improvement. Improvement of his product, his means of production and his human resources. The report book represents an attempt by Oldknow both to make his employees accountable for the time for which they were being paid and for their behaviour whilst on the job. At Mellor, behaviour was still a concern but it was not recorded, the accounting record was no longer concerned with the individual but the overall view.

References

MANUSCRIPTS:

SO; Oldknow Papers, John Rylands University Library, Quote English MSS number, Manchester, England.

SOP, Arkwright/Oldknow Collection, Rare Book and Manuscript Library, ERA Seligman Collection, Columbia University, New York, USA.

MK, McConnel & Kennedy Papers, John Rylands University Library, Manchester, England.

MISC, Miscellaneous papers, Manchester Central Library, Manchester, England.

NEWSPAPERS AND JOURNALS:

The Times of London
North Cheshire Herald
Stockport Advertiser
Gentleman's Magazine
The Reasoner and Theological Examiner
Manchester Mercury
Manchester Weekly Times

The Dictionary of National Biography, Oxford University Press, 1960.

Ashton, T., *The Industrial Revolution 1760-1830*, Oxford University Press, 1964.

Edwards, M., *The Growth of the British Cotton Trade*, Manchester University Press, 1967.

Fay, C., *Great Britain From Adam Smith to the Present Day*, 4th ed., Longmans, Green & Co, 1937.

Garcke, E. and J. Fells, *Factory Accounts Their Principles and Practice*, Arno Press, 1976, first published by Crosby Lockwood and Son, 1893.

- Giles, P., *Samuel Oldknow: A Postscript*, MSS Stockport County Library, 1984.
- Hume, P., "Samuel Oldknow", *The Lady*, 11th December 1969.
- Landes, D., *Revolution in Time*, Harvard University Press, 1983.
- Mantoux, P., *The Industrial Revolution in the Eighteenth Century*, Jonathon Cape, 1961 (first published 1928)
- Mathias, P., *The First Industrial Nation*, Methuen & Co Ltd, 1969.
- McKendrick, N., "Josiah Wedgewood and Factory Discipline", *The Historical Journal*, IV (1961) pp 30-55.
- Norton, G., *Textile Manufacturers' Book-keeping*, Arno Press, 1976, first published by Simkin, Marshall, Hamilton, Kent & Co., 1894.
- Oldham, T., *Samuel Oldknow*, Marple Local History Society, 1990.
- Owen, R., *The Life of Robert Owen Written By Himself, Volume 1*, published 1857, Frank Cass & Co Ltd, 1967.
- Peel, R., "An Early English Print Works", *International Dyer*, Vol. 135, Nos 2 & 4, 1966.
- Pollard, S., *The Genesis of Modern Management: A Study of the Industrial Revolution in Great Britain*, Penguin Books, 1965.
- Reid, D., "The Decline of Saint Monday 1766-1876", *Past & Present*, No 71, May 1976.
- Rifkin, J., *Time Wars*, Simon & Schuster Inc, 1987.
- Thompson, E., "Time, Work-Discipline, and Industrial Capitalism", *Past and Present*, No. 38, 1967
- Thompson, E., *Customs in Common*, Penguin, 1993.
- Thompson, E., *The Making of the English Working Class*, Penguin, 1963.
- Unwin, G., *Samuel Oldknow and the Arkwrights*, 2nd ed, Augustus Kelley, 1968.
- Unwin, G., *Samuel Oldknow and the Arkwrights*, Manchester University Press, 1924.

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