OXFORD JOURNALS
OXFORD UNIVERSITY PRESS

The Past and Present Society

Time, Work-Discipline, and Industrial Capitalism
Author(s): E. P. Thompson
Source: *Past & Present*, No. 38 (Dec., 1967), pp. 56-97
Published by: Oxford University Press on behalf of The Past and Present Society
Stable URL: http://www.jstor.org/stable/649749
Accessed: 15-10-2017 15:07 UTC

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TIME, WORK-DISCIPLINE, AND INDUSTRIAL CAPITALISM

Tess . . . started on her way up the dark and crooked lane or street not made for hasty progress; a street laid out before inches of land had value, and when one-handed clocks sufficiently subdivided the day. *Thomas Hardy.*

I

IT IS COMMONPLACE THAT THE YEARS BETWEEN 1300 AND 1650 SAW within the intellectual culture of Western Europe important changes in the apprehension of time.[1] In the *Canterbury Tales* the cock still figures in his immemorial rôle as nature's timepiece: Chauntecleer —

> Caste up his eyen to the brighte sonne,
> That in the signe of Taurus hadde yronne
> Twenty degrees and oon, and somwhat moore,
> He knew by kynde, and by noon oother loore
> That it was pryme, and crew with blisful stevene . . . .

But although "By nature knew he ech ascensioun/ Of the equynoxial in thilke toun", the contrast between "nature's" time and clock time is pointed in the image —

> Wel sikerer was his crowyng in his logge
> Than is a clokke, or an abbey orlogge.

This is a very early clock: Chaucer (unlike Chauntecleer) was a Londoner, and was aware of the times of Court, of urban organization, and of that "merchant's time" which Jacques Le Goff, in a suggestive article in *Annales*, has opposed to the time of the medieval church.[2]

I do not wish to argue how far the change was due to the spread of clocks from the fourteenth century onwards, how far this was itself a symptom of a new Puritan discipline and bourgeois exactitude. However we see it, the change is certainly there. The clock steps on to the Elizabethan stage, turning Faustus's last soliloquy into a dialogue with time: "the stars move still, time runs, the clock will strike". Sidereal time, which has been present since literature began,

[1] Lewis Mumford makes suggestive claims in *Technics and Civilization* (London, 1934), esp. pp. 12-18, 196-9: see also S. de Grazia, *Of Time, Work, and Leisure* (New York, 1962), Carlo M. Cipolla, *Clocks and Culture 1300-1700* (London, 1967), and Edward T. Hall, *The Silent Language* (New York, 1959).

[2] J. le Goff, "Au Moyen Age: Temps de L'Eglise et temps du marchand", *Annales, E.S.C.*, xv (1960); and the same author's "Le temps du travail dans le 'crise' du XIVe Siècle: du temps médiéval au temps moderne", *Le Moyen Age*, lxix (1963).

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has now moved at one step from the heavens into the home. Mortality and love are both felt to be more poignant as the "Snayly motion of the mooving hand"[3] crosses the dial. When the watch is worn about the neck it lies in proximity to the less regular beating of the heart. The conventional Elizabethan images of time as a devourer, a defacer, a bloody tyrant, a scytheman, are old enough, but there is a new immediacy and insistence.[4]

As the seventeenth century moves on the image of clock-work extends, until, with Newton, it has engrossed the universe. And by the middle of the eighteenth century (if we are to trust Sterne) the clock had penetrated to more intimate levels. For Tristram Shandy's father — "one of the most regular men in everything he did . . . that ever lived" — "had made it a rule for many years of his life, — on the first Sunday night of every month . . . to wind up a large house-clock, which we had standing on the back-stairs head". "He had likewise gradually brought some other little family concernments to the same period", and this enabled Tristram to date his conception very exactly. It also provoked *The Clockmaker's Outcry against the Author*:

> The directions I had for making several clocks for the country are countermanded; because no modest lady now dares to mention a word about winding-up a clock, without exposing herself to the sly leers and jokes of the family . . . Nay, the common expression of street-walkers is, "Sir, will you have your clock wound up?"

Virtuous matrons (the "clockmaker" complained) are consigning their clocks to lumber rooms as "exciting to acts of carnality".[5]

However, this gross impressionism is unlikely to advance the present enquiry: how far, and in what ways, did this shift in time-sense affect labour discipline, and how far did it influence the inward apprehension of time of working people? If the transition to mature industrial society entailed a severe restructuring of working habits — new disciplines, new incentives, and a new human nature upon which these incentives could bite effectively — how far is this related to changes in the inward notation of time?

[3] M. Drayton, "Of his Ladies not Comming to London", *Works*, ed. J. W. Hebel (Oxford, 1932), iii, p. 204.

[4] The change is discussed Cipolla, *op. cit.*; Erwin Sturzl, *Der Zeitbegriff in der Elisabethanischen Literatur* (Wiener Beitrage zur Englischen Philologie, lxix, Wien-Stuttgart, 1965); Alberto Tenenti, *Il Senso della Morte e l'amore della vita nel rinanscimento* (Milan, 1957).

[5] Anon., *The Clockmaker's Outcry against the Author of . . . Tristram Shandy* (London, 1760), pp. 42-3.

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II

It is well known that among primitive peoples the measurement of time is commonly related to familiar processes in the cycle of work or of domestic chores. Evans-Pritchard has analysed the time-sense of the Nuer:

> The daily timepiece is the cattle clock, the round of pastoral tasks, and the time of day and the passage of time through a day are to a Nuer primarily the succession of these tasks and their relation to one another.

Among the Nandi an occupational definition of time evolved covering not only each hour, but half hours of the day — at 5-30 in the morning the oxen have gone to the grazing-ground, at 6 the sheep have been unfastened, at 6-30 the sun has grown, at 7 it has become warm, at 7-30 the goats have gone to the grazing-ground, etc. — an uncommonly well-regulated economy. In a similar way terms evolve for the measurement of time intervals. In Madagascar time might be measured by "a rice-cooking" (about half an hour) or "the frying of a locust" (a moment). The Cross River natives were reported as saying "the man died in less than the time in which maize is not yet completely roasted" (less than fifteen minutes).[6]

It is not difficult to find examples of this nearer to us in cultural time. Thus in seventeenth-century Chile time was often measured in "credos": an earthquake was described in 1647 as lasting for the period of two credos; while the cooking-time of an egg could be judged by an Ave Maria said aloud. In Burma in recent times monks rose at daybreak "when there is light enough to see the veins in the hand".[7] The Oxford English Dictionary gives us English examples — "pater noster wyle", "miserere whyle" (1450), and (in the New English Dictionary but not the Oxford English Dictionary) "pissing while" — a somewhat arbitrary measurement.

Pierre Bourdieu has explored more closely the attitudes towards time of the Kabyle peasant (in Algeria) in recent years: "An attitude of submission and of nonchalant indifference to the passage of time

[6] E. E. Evans-Pritchard, *The Nuer* (Oxford, 1940), pp. 100-4; M. P. Nilsson, *Primitive Time Reckoning* (Lund, 1920), pp. 32-3, 42; P. A. Sorokin and R. K. Merton, "Social Time: a Methodological and Functional Analysis", *Amer. Jl. Sociol.*, xlii (1937); A. I. Hallowell, "Temporal Orientation in Western Civilization and in a Pre-Literate Society", *Amer. Anthrop.*, new ser. xxxix (1937). Other sources for primitive time reckoning are cited in H. G. Alexander, *Time as Dimension and History* (Albuquerque, 1945), p. 26, and Beate R. Salz, "The Human Element in Industrialization", *Econ. Devel. and Cult. Change*, iv (1955), esp. pp. 94-114.

[7] E. P. Salas, "L'Evolution de la notion du temps et les horlogers à l'époque coloniale au Chili", *Annales E.S.C.*, xxi (1966), p. 146; *Cultural Patterns and Technical Change*, ed. M. Mead (New York, UNESCO, 1953), p. 75.

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which no one dreams of mastering, using up, or saving . . . Haste is seen as a lack of decorum combined with diabolical ambition". The clock is sometimes known as "the devil's mill"; there are no precise meal-times; "the notion of an exact appointment is unknown; they agree only to meet 'at the next market' ". A popular song runs:

> It is useless to pursue the world, No one will ever overtake it.[8]

Synge, in his well-observed account of the Aran Islands, gives us a classic example:

> While I am walking with Michael someone often comes to me to ask the time of day. Few of the people, however, are sufficiently used to modern time to understand in more than a vague way the convention of the hours and when I tell them what o'clock it is by my watch they are not satisfied, and ask how long is left them before the twilight.[9]

> The general knowledge of time on the island depends, curiously enough, upon the direction of the wind. Nearly all the cottages are built . . . with two doors opposite each other, the more sheltered of which lies open all day to give light to the interior. If the wind is northerly the south door is opened, and the shadow of the door-post moving across the kitchen floor indicates the hour; as soon, however, as the wind changes to the south the other door is opened, and the people, who never think of putting up a primitive dial, are at a loss . . . .
> When the wind is from the north the old woman manages my meals with fair regularity; but on the other days she often makes my tea at three o'clock instead of six . . . .[10]

Such a disregard for clock time could of course only be possible in a crofting and fishing community whose framework of marketing and administration is minimal, and in which the day's tasks (which might vary from fishing to farming, building, mending of nets, thatching, making a cradle or a coffin) seem to disclose themselves, by the logic of need, before the crofter's eyes.[11] But his account will serve to emphasize the essential conditioning in differing notations of time provided by different work-situations and their relation to "natural" rhythms. Clearly hunters must employ certain hours of the night to set their snares. Fishing and seafaring people must integrate their lives with the tides. A petition from Sunderland in 1800 includes

[8] P. Bourdieu, "The attitude of the Algerian peasant toward time", in *Mediterranean Countrymen*, ed. J. Pitt-Rivers (Paris, 1963), pp. 55-72.

[9] Cf. *ibid.*, p. 179: "Spanish Americans do not regulate their lives by the clock as Anglos do. Both rural and urban people, when asked when they plan to do something, gives answers like: 'Right now, about two or four o'clock' ".

[10] J. M. Synge, *Plays, Poems, and Prose* (Everyman edn., London, 1941), p. 257.

[11] The most important event in the relation of the islands to an external economy in Synge's time was the arrival of the steamer, whose times might be greatly affected by tide and weather. See Synge, *The Aran Islands* (Dublin, 1907), pp. 115-6.

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the words "considering that this is a seaport in which many people are obliged to be up at all hours of the night to attend the tides and their affairs upon the river".[12] The operative phrase is "attend the tides": the patterning of social time in the seaport follows *upon* the rhythms of the sea; and this appears to be natural and comprehensible to fishermen or seamen: the compulsion is nature's own.

In a similar way labour from dawn to dusk can appear to be "natural" in a farming community, especially in the harvest months: nature demands that the grain be harvested before the thunderstorms set in. And we may note similar "natural" work-rhythms which attend other rural or industrial occupations: sheep must be attended at lambing time and guarded from predators; cows must be milked; the charcoal fire must be attended and not burn away through the turfs (and the charcoal burners must sleep beside it); once iron is in the making, the furnaces must not be allowed to fail.

The notation of time which arises in such contexts has been described as task-orientation. It is perhaps the most effective orientation in peasant societies, and it remains important in village and domestic industries It has by no means lost all relevance in rural parts of Britain today. Three points may be proposed about task-orientation. First, there is a sense in which it is more humanly comprehensible than timed labour. The peasant or labourer appears to attend upon what is an observed necessity. Second, a community in which task-orientation is common appears to show least demarcation between "work" and "life". Social intercourse and labour are intermingled — the working-day lengthens or contracts according to the task — and there is no great sense of conflict between labour and "passing the time of day". Third, to men accustomed to labour timed by the clock, this attitude to labour appears to be wasteful and lacking in urgency.[13]

[12] Public Rec. Off., W.O. 40/17. It is of interest to note other examples of the recognition that seafaring time conflicted with urban routines: the Court of Admiralty was held to be always open, "for strangers and merchants, and seafaring men, must take the opportunity of tides and winds, and cannot, without ruin and great prejudice attend the solemnity of courts and dilatory pleadings" (see E. Vansittart Neale, *Feasts and Fasts* [London, 1845], p. 249), while in some Sabbatarian legislation an exception was made for fishermen who sighted a shoal off-shore on the Sabbath day.

[13] Henri Lefebvre, *Critique de la Vie Quotidienne* (Paris, 1958), ii, pp. 52-6, prefers a distinction between "cyclical time" — arising from changing seasonal occupations in agriculture — and the "linear time" of urban, industrial organization. More suggestive is Lucien Febvre's distinction between "Le temps vécu et le temps-mesure", *La Problème de L'Incroyance an XVIe Siècle* (Paris, 1947), p. 431. A somewhat schematic examination of the organization of tasks in primitive economies is in Stanley H. Udy, *Organisation of Work* (New Haven, 1959), ch. 2.

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Such a clear distinction supposes, of course, the independent peasant or craftsman as referent. But the question of task-orientation becomes greatly more complex at the point where labour is employed. The entire family economy of the small farmer may be task-orientated; but within it there may be a division of labour, and allocation of rôles, and the discipline of an employer-employed relationship between the farmer and his children. Even here time is beginning to become money, the employer's money. As soon as actual hands are employed the shift from task-orientation to timed labour is marked. It is true that the timing of work can be done independently of any time-piece — and indeed precedes the diffusion of the clock. Still, in the mid-seventeenth century substantial farmers calculated their expectations of employed labour (as did Henry Best) in "dayworkes" — "the Cunnigarth, with its bottomes, is 4 large dayworkes for a good mower", "the Spellowe is 4 indifferent dayworkes", etc.;[14] and what Best did for his own farm, Markham attempted to present in general form:

> A man . . . may mow of Corn, as Barley and Oats, if it be thick, loggy and beaten down to the earth, making fair work, and not cutting off the heads of the ears, and leaving the straw still growing one acre and a half in a day: but if it be good thick and fair standing corn, then he may mow two acres, or two acres and a half in a day; but if the corn be short and thin, then he may mow three, and sometimes four Acres in a day, and not be overlaboured . . . .[15]

The computation is difficult, and dependent upon many variables. Clearly, a straightforward time-measurement was more convenient.[16]

This measurement embodies a simple relationship. Those who are employed experience a distinction between their employer's time and their "own" time. And the employer must *use* the time of his labour, and see it is not wasted: not the task but the value of time when reduced to money is dominant. Time is now currency: it is not passed but spent.

We may observe something of this contrast, in attitudes towards both time and work, in two passages from Stephen Duck's poem,

[14] *Rural Economy in Yorkshire in 1641 . . . Farming and Account Books of Henry Best*, ed. C. B. Robinson (Surtees Society, xxxiii, 1857), pp. 38-9.

[15] G.M., *The Inrichment of the Weald of Kent*, 10th edn. (London, 1660), ch. xii: "A generall computation of men, and cattel's labours: what each may do without hurt daily", pp. 112-8.

[16] Wage-assessments still, of course, assumed the statute dawn-to-dusk day, defined, as late as 1725, in a Lancashire assessment: "They shall work from five in the morning till betwixt seven and eight at the night, from the midst of March to the middle of September" — and thereafter "from the spring of day till night", with two half hours for drinking, and one hour for dinner and (in summer only) half hour for sleep: "else, for every hour's absence to defaulk a penny": *Annals of Agriculture*, xxv (London, 1796).

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"The Thresher's Labour". The first describes a work-situation which we have come to regard as the norm in the nineteenth and twentieth centuries:

From the strong Planks our Crab-Tree Staves rebound,
And echoing Barns return the rattling Sound.
Now in the Air our knotty Weapons Fly;
And now with equal Force descend from high:
Down one, one up, so well they keep the Time,
The *Cyclops* Hammers could not truer chime . . . .
In briny Streams our Sweat descends apace,
Drops from our Locks, or trickles down our Face.
No intermission in our Works we know;
The noisy Threshall must for ever go.
Their Master absent, others safely play;
The sleeping Threshall doth itself betray.
Nor yet the tedious Labour to beguile,
And make the passing Minutes sweetly smile,
Can we, like Shepherds, tell a merry Tale?
The Voice is lost, drown'd by the noisy Flail . . . .

Week after Week we this dull Task pursue,
Unless when winnowing Days produce a new;
A new indeed, but frequently a worse,
The Threshall yields but to the Master's Curse:
He counts the Bushels, counts how much a Day,
Then swears we've idled half our Time away.
Why look ye, Rogues! D'ye think that this will do?
Your Neighbours thresh as much again as you.

This would appear to describe the monotony, alienation from pleasure in labour, and antagonism of interests commonly ascribed to the factory system. The second passage describes the harvesting:

At length in Rows stands up the well-dry'd Corn,
A grateful Scene, and ready for the Barn.
Our well-pleas'd Master views the Sight with joy,
And we for carrying all our Force employ.
Confusion soon o'er all the Field appears,
And stunning Clamours fill the Workmens Ears;
The Bells, and clashing Whips, alternate sound,
And rattling Waggons thunder o'er the Ground.
The Wheat got in, the Pease, and other Grain,
Share the same Fate, and soon leave bare the Plain:
In noisy Triumph the last Load moves on,
And loud Huzza's proclaim the Harvest done.

This is, of course, an obligatory set-piece in eighteenth-century farming poetry. And it is also true that the good morale of the labourers was sustained by their high harvest earnings. But it would be an error to see the harvest situation in terms of direct responses to economic stimuli. It is also a moment at which the older collective rhythms break through the new, and a weight of folk-lore and of rural custom could be called as supporting evidence as to the psychic

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satisfaction and ritual functions — for example, the momentary obliteration of social distinctions — of the harvest-home. "How few now know", M. K. Ashby writes, "what it was ninety years ago to get in a harvest! Though the disinherited had no great part of the fruits, still they shared in the achievement, the deep involvement and joy of it".[17]

III

It is by no means clear how far the availability of precise clock time extended at the time of the industrial revolution. From the fourteenth century onwards church clocks and public clocks were erected in the cities and large market towns. The majority of English parishes must have possessed church clocks by the end of the sixteenth century.[18] But the accuracy of these clocks is a matter of dispute; and the sundial remained in use (partly to set the clock) in the seventeenth, eighteenth and nineteenth centuries.[19]

Charitable donations continued to be made in the seventeenth century (sometimes laid out in "clockland", "ding dong land", or "curfew bell land") for the ringing of early morning bells and curfew bells.[20] Thus Richard Palmer of Wokingham (Berks) gave, in 1664, lands in trust to pay the sexton to ring the great bell for half an hour every evening at eight o'clock and every morning at four o'clock, or as near to those hours as might be, from the 10th September to the 11th March in each year

> not only that as many as might live within the sound might be thereby induced to a timely going to rest in the evening, and early arising in the morning to the labours and duties of their several callings, (things ordinarily attended and rewarded with thrift and proficiency) . . . .

but also so that strangers and others within sound of the bell on winter nights "might be informed of the time of night, and receive

[17] M. K. Ashby, *Joseph Ashby of Tysoe* (Cambridge, 1961), p. 24.

[18] For the early evolution of clocks, see Carlo M. Cipolla, *Clocks and Culture*, *passim*; A. P. Usher, *A History of Mechanical Inventions*, rev. edn. (Harvard, 1962), ch. vii; Charles Singer *et al* (eds.), *A History of Technology* (Oxford, 1956), iii, ch. xxiv; R. W. Symonds, *A History of English Clocks* (Penguin, 1947), pp. 10-16, 33; E. L. Edwards, *Weight-driven Chamber Clocks of the Middle Ages and Renaissance* (Altrincham, 1965).

[19] See M. Gatty, *The Book of Sun-diales*, rev. edn. (London, 1900). For an example of a treatise explaining in detail how to set time-pieces by the sundial, see John Smith, *Horological Dialogues* (London, 1675). For examples of benefactions for sundials, see C. J. C. Beeson, *Clockmaking in Oxfordshire* (Banbury Hist. Assn., 1962), pp. 76-8; A. J. Hawkes, *The Clockmakers and Watchmakers of Wigan, 1650-1850* (Wigan, 1950), p. 27.

[20] Since many early church clocks did not strike the hour, they were supplemented by a bell-ringer.

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some guidance into their right way". These "rational ends", he conceived, "could not but be well liked by any discreet person, the same being done and well approved of in most of the cities and market-towns, and many other places in the kingdom . . .". The bell would also remind men of their passing, and of resurrection and judgement.[21] Sound served better than sight, especially in growing manufacturing districts. In the clothing districts of the West Riding, in the Potteries, (and probably in other districts) the horn was still used to awaken people in the mornings.[22] The farmer aroused his own labourers, on occasion, from their cottages; and no doubt the knocker-up will have started with the earliest mills.

A great advance in the accuracy of household clocks came with the application of the pendulum after 1658. Grandfather clocks begin to spread more widely from the 1660s, but clocks with minute hands (as well as hour hands) only became common well after this time.[23] As regards more portable time, the pocket watch was of dubious accuracy until improvements were made in the escapement and the spiral balance-spring was applied after 1674.[24] Ornate and rich design was still preferred to plain serviceability. A Sussex diarist notes in 1688:

> bought . . . a silver-cased watch, wch cost me *3li* . . . This watch shewes ye hour of ye day, ye month of ye year, ye age of ye moon, and ye ebbing and flowing of ye water; and will goe 30 hours with one winding up.[25]

Professor Cipolla suggests 1680 as the date at which English clock- and watch-making took precedence (for nearly a century) over European competitors.[26] Clock-making had emerged from the skills

[21] *Charity Commissioners Reports* (1837/8), xxxii, pt. 1, p. 224; see also H. Edwards, *A Collection of Old English Customs* (London, 1842), esp. pp. 223-7; S. O. Addy, *Household Tales* (London, 1895), pp. 129-30; *County Folk-Lore, East Riding of Yorkshire*, ed. Mrs. Gutch (London, 1912), pp. 150-1, *Leicestershire and Rutland*, ed. C. J. Bilson (London, 1895), pp. 120-1; C. J. C. Beeson, *op. cit.*, p. 36; A. Gatty, *The Bell* (London, 1848), p. 20; P. H. Ditchfield, *Old English Customs* (London, 1896), pp. 232-41.

[22] H. Heaton, *The Yorkshire Woollen and Worsted Industries* (Oxford, 1965), p. 347. Wedgwood seems to have been the first to replace the horn by the bell in the Potteries: E. Meteyard, *Life of Josiah Wedgwood* (London, 1865), i, pp. 329-30.

[23] W. I. Milham, *Time and Timekeepers* (London, 1923), pp. 142-9; F. J. Britten, *Old Clocks and Watches and Their Makers*, 6th edn. (London, 1932), p. 543; E. Bruton, *The Longcase Clock* (London, 1964), ch. ix.

[24] Milham, *op. cit.*, pp. 214-26; C. Clutton and G. Daniels, *Watches* (London, 1965); F. A. B. Ward, *Handbook of the Collections illustrating Time Measurement* (London, 1947), p. 29; Cipolla, *op. cit.*, p. 139.

[25] Edward Turner, "Extracts from the Diary of Richard Stapley", *Sussex Archaeol. Coll.*, ii (1899), p. 113.

[26] See the admirable survey of the origin of the English industry in Cipolla, *op. cit.*, pp. 65-9.

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of the blacksmith,[27] and the affinity can still be seen in the many hundreds of independent clock-makers, working to local orders in their own shops, dispersed through the market-towns and even the large villages of England, Scotland and Wales in the eighteenth-century.[28] While many of these aspired to nothing more fancy than the work-a-day farmhouse longcase clock, craftsmen of genius were among their numbers. Thus John Harrison, clock-maker and former carpenter of Barton-on-Humber (Lincs.), perfected a marine chronometer, and in 1730 could claim to have

> brought a Clock to go nearer the truth, than can be well imagin'd, considering the vast Number of seconds of Time there is in a Month, in which space of time it does not vary above one second . . . I am sure I can bring it to the nicety of 2 or 3 seconds in a year.[29]

And John Tibbot, a clock-maker in Newtown (Mon.), had perfected a clock in 1810 which (he claimed) seldom varied more than a second over two years.[30] In between these extremes were those numerous, shrewd, and highly-capable craftsmen who played a critically-important rôle in technical innovation in the early stages of the industrial revolution. The point, indeed, was not left for historians to discover: it was argued forcibly in petitions of the clock- and watch-makers against the assessed taxes in February 1798. Thus the petition from Carlisle:

> . . . the cotton and woollen manufactories are entirely indebted for the state of perfection to which the machinery used therein is now brought to the clock and watch makers, great numbers of whom have, for several years past . . . been employed in inventing and constructing as well as superintending such machinery . . . .[31]

Small-town clock-making survived into the nineteenth century, although from the early years of that century it became common for

[27] As late as 1697 in London the Blacksmith's Company was contesting the monopoly of the Clockmakers (founded in 1631) on the grounds that "it is well known that they are the originall and proper makers of clocks &c. and have full skill and knowledge therein . . .": S. E. Atkins and W. H. Overall, *Some Account of the Worshipful Company of Clockmakers of the City of London* (London, 1881), p. 118. For a village blacksmith-clockmaker see J. A. Daniell, "The Making of Clocks and Watches in Leicestershire and Rutland", *Trans. Leics. Archaeol Soc.*, xxvii (1951), p. 32.

[28] Lists of such clockmakers are in F. J. Britten, *op. cit.*; John Smith, *Old Scottish Clockmakers* (Edinburgh, 1921); and I. C. Peate, *Clock and Watch Makers in Wales* (Cardiff, 1945).

[29] Records of the Clockmaker's Company, London Guildhall Archives, 6026/1. See (for Harrison's chronometer) F. A. B. Ward, *op. cit.*, p. 32.

[30] I. C. Peate, "John Tibbot, Clock and Watch Maker", *Montgomeryshire Collections*, xlviii, pt. 2 (Welshpool, 1944), p. 178.

[31] *Commons Journals*, liii, p. 251. The witnesses from Lancashire and Derby gave similar testimonies: *ibid.*, pp. 331, 335.

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the local clock-maker to buy his parts ready-made from Birmingham, and to assemble these in his own work-shop. By contrast, watch-making, from the early years of the eighteenth century was concentrated in a few centres, of which the most important were London, Coventry, Prescot and Liverpool.[32] A minute subdivision of labour took place in the industry early, facilitating large-scale production and a reduction in prices: the annual output of the industry at its peak (1796) was variously estimated at 120,000 and 191,678, a substantial part of which was for the export market.[33] Pitt's ill-judged attempt to tax clocks and watches, although it lasted only from July 1797 to March 1798, marked a turning-point in the fortunes of the industry. Already, in 1796, the trade was complaining at the competition of French and Swiss watches; the complaints continue to grow in the early years of the nineteenth century. The Clockmakers' Company alleged in 1813 that the smuggling of cheap gold watches has assumed major proportions, and that these were sold by jewellers, haberdashers, milliners, dressmakers, French toy-shops, perfumers, etc., "almost entirely for the use of *the upper classes of society*". At the same time, some cheap smuggled goods, sold by pawnbrokers or travelling salesmen, must have been reaching the poorer classes.[34]

It is clear that there were plenty of watches and clocks around by 1800. But it is not so clear who owned them. Dr. Dorothy George, writing of the mid-eighteenth century, suggests that "labouring men, as well as artisans, frequently possessed silver watches", but the

[32] Centres of the clock and watchmaking trade petitioning against the tax in 1798 were: London, Bristol, Coventry, Leicester, Prescot, Newcastle, Edinburgh, Liverpool, Carlisle, and Derby: *Commons Journals*, liii, pp. 158, 167, 174, 178, 230, 232, 239, 247, 251, 316. It was claimed that 20,000 were engaged in the trade in London alone, 7,000 of these in Clerkenwell. But in Bristol only 150 to 200 were engaged. For London, see M. D. George, *London Life in the Eighteenth Century* (London, 1925), pp. 173-6; Atkins and Overall, *op. cit.*, p. 269; *Morning Chronicle*, 19 Dec. 1797; *Commons Journals*, liii, p. 158. For Bristol, *ibid.*, p. 332. For Lancashire, *Vict. County Hist. Lancs.* (London, 1908), ii, pp. 366-7. The history of the eighteenth-century watch trade in Coventry appears to be unwritten.

[33] The lower estimate was given by a witness before the committee on watchmakers' petitions (1798): *Commons Journals*, liii, p. 328 — estimated annual home consumption 50,000, export 70,000. See also a similar estimate (clocks and watches) for 1813, Atkins and Overall, *op. cit.*, p. 276. The higher estimate is for watch-cases marked at Goldsmiths Hall — silver cases, 185,102 in 1796, declining to 91,346 in 1816 — and is in the *Report of the Select Committee on the Petitions of Watchmakers*, *PP.* 1817, vi and 1818, ix, pp. 1, 12.

[34] Atkins and Overall, *op. cit.*, pp. 302, 308 — estimating (excessively?) 25,000 gold and 10,000 silver watches imported, mostly illegally, per annum; and Anon., *Observations on the Art and Trade of Clock and Watchmaking* (London, 1812), pp. 16-20.

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statement is indefinite as to date and only slightly documented.[35] The average price of plain longcase clocks made locally in Wrexham between 1755 and 1774 ran between £2 and £2 15s. 0d.; a Leicester price-list for new clocks, without cases, in 1795 runs between £3 and £5. A well-made watch would certainly cost no less.[36] On the face of it, no labourer whose budget was recorded by Eden or David Davies could have meditated such prices, and only the best-paid urban artisan. Recorded time (one suspects) belonged in the mid-century still to the gentry, the masters, the farmers and the tradesmen; and perhaps the intricacy of design, and the preference for precious metal, were in deliberate accentuation of their symbolism of status.

But, equally, it would appear that the situation was changing in the last decades of the century. The debate provoked by the attempt to impose a tax on all clocks and watches in 1797-8 offers a little evidence. It was perhaps the most unpopular and it was certainly the most unsuccessful of all of Pitt's assessed taxes:

> If your Money he take — why your Breeches remain;
> And the flaps of your Shirts, if your Breeches he gain;
> And your Skin, if your Shirts; and if Shoes, your bare feet.
> Then, never mind TAXES — *We've beat the Dutch fleet!*[37]

The taxes were of 2s. 6d. upon each silver or metal watch; 10s. upon each gold one; and 5s. upon each clock. In debates upon the tax, the statements of ministers were remarkable only for their contradictions. Pitt declared that he expected the tax to produce £200,000 per annum:

> In fact, he thought, that as the number of houses paying taxes is 700,000, and that in every house there is probably one person who wears a watch, the tax upon watches only would produce that sum.

At the same time, in response to criticism, ministers maintained that the ownership of clocks and watches was a mark of luxury. The Chancellor of the Exchequer faced both ways: watches and clocks "were certainly articles of convenience, but they were also articles of luxury . . . generally kept by persons who would be pretty well able

[35] M. D. George, *op. cit.*, p. 70. Various means of time-telling were of course employed without clocks: the engraving of the wool-comber in *The Book of English Trades* (London, 1818), p. 438 shows him with an hour-glass on his bench; threshers measured time as the light from the door moved across the barn floor; and Cornish tinners measured it underground by candles (information from Mr. J. G. Rule).

[36] I. C. Peate, "Two Montgomeryshire Craftsmen", *Montgomeryshire Collections*, xlviii, pt. 1 (Welshpool, 1944), p. 5; J. A. Daniell, *op. cit.*, p. 39. The average price of watches exported in 1792 was £4: *P.P.* 1818, ix, p. 1.

[37] "A loyal Song", *Morning Chronicle*, 18 Dec. 1797.

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to pay . . .". "He meant, however, to exempt Clocks of the meaner sort that were most commonly kept by the poorer classes".[38] The Chancellor clearly regarded the tax as a sort of Lucky Bag; his guess was more than three times that of the Pilot:

GUESSWORK TABLE

Articles	Tax	Chancellor's estimate	Would mean
Silver and metal watches	2s. 6d.	£100,000	800,000 watches
Gold watches	10s. 0d.	£200,000	400,000 ,,
Clocks	5s. 0d.	£3 or £400,000	*c.* 1,400,000 clocks

His eyes glittering at the prospect of enhanced revenue, Pitt revised his definitions: a *single* watch (or dog) might be owned as an article of convenience — more than this were "tests of affluence".[39]

Unfortunately for the quantifiers of economic growth, one matter was left out of account. The tax was impossible to collect.[40] All householders were ordered, upon dire pains, to return lists of clocks and watches within their houses. Assessments were to be quarterly:

> Mr. Pitt has very proper ideas of the remaining finances of the country. The *half-crown* tax upon watches is appointed to be collected *quarterly*. This is grand and dignified. It gives a man an air of consequence to pay *sevenpence halfpenny* to support *religion*, *property*, and *social order*.[41]

In fact, the tax was regarded as folly; as setting up a system of espionage; and as a blow against the middle class.[42] There was a buyer's strike. Owners of gold watches melted down the covers and exchanged them for silver or metal.[43] The centres of the trade were plunged into crisis and depression.[44] Repealing the Act in March

[38] The exemptions in the Act (37 Geo. III, c. 108, cl. xxi, xxii and xxiv) were (a) for one clock or watch for any householder exempted from window and house tax (i.e. cottager), (b) for clocks "made of wood, or fixed upon wood, and which clocks are usually sold by the respective makers thereof at a price not exceeding the sum of 20s . . .", (c) Servants in husbandry.

[39] *Morning Chronicle*, 1 July 1797; *Craftsman*, 8 July 1797; *Parl. Hist.*, xxxiii, *passim*.

[40] In the year ending 5 April 1798 (three weeks after repeal) the tax had raised £2,600: *P.P.*, ciii, Accounts and Papers (1797-98), vol. xlv, 933 (2) and 933 (3).

[41] *Morning Chronicle*, 26 July 1797.

[42] One indication may be seen in the sluggardly collection of arrears. Taxes imposed, July 1797: receipts, year ending Jan. 1798 — £300. Taxes repealed, March 1798: arrears received, year ending Jan. 1799, £35,420; year ending Jan. 1800, £14,966. *P.P.*, cix, Accounts and Papers (1799-1800), li, pp. 1009 (2) and 1013 (2).

[43] *Morning Chronicle*, 16 Mar. 1798; *Commons Journals*, liii, p. 328.

[44] See petitions, cited in note 32 above; *Commons Journals*, liii, pp. 327-33; *Morning Chronicle*, 13 Mar. 1798. Two-thirds of Coventry watchmakers were said to be unemployed: *ibid.*, 8 Dec. 1797.

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1798, Pitt said sadly that the tax *would* have been productive much beyond the calculation originally made; but it is not clear whether it was his own calculation (£200,000) or the Chancellor of the Exchequer's (£700,000) which he had in mind.[45]

We remain (but in the best of company) in ignorance. There were a lot of timepieces about in the 1790s: emphasis is shifting from "luxury" to "convenience"; even cottagers may have wooden clocks costing less than twenty shillings. Indeed, a general diffusion of clocks and watches is occurring (as one would expect) at the exact moment when the industrial revolution demanded a greater synchronization of labour.

Although some very cheap — and shoddy — timepieces were beginning to appear, the prices of efficient ones remained for several decades beyond the normal reach of the artisan.[46] But we should not allow normal economic preferences to mislead us. The small instrument which regulated the new rhythms of industrial life was at the same time one of the more urgent of the new needs which industrial capitalism called forth to energize its advance. A clock or watch was not only useful; it conferred prestige upon its owner, and a man might be willing to stretch his resources to obtain one. There were various sources, various occasions. For decades a trickle of sound but cheap watches found their way from the pickpocket to the receiver, the pawnbroker, the public house.[47] Even labourers, once or twice in their lives, might have an unexpected windfall, and blow it on a watch: the militia bounty,[48] harvest earnings, or the yearly

[45] *Craftsman*, 17 Mar. 1798. The one achievement of the Act was to bring into existence — in taverns and public places — the "Act of Parliament Clock".

[46] Imported watches were quoted at a price as low as 5s. in 1813: Atkins and Overall, *op. cit.*, p. 292. See also note 38 above. The price of an efficient British silver pocket watch was quoted in 1817 (*Committee on Petitions of Watchmakers, P.P.*, 1817, vi) at two to three guineas; by the 1830s an effective metal watch could be had for £1: D. Lardner, *Cabinet Cyclopaedia* (London, 1834), iii, p. 297.

[47] Many watches must have changed hands in London's underworld: legislation in 1754 (27 Geo. II, c. 7) was directed at receivers of stolen watches. The pickpockets of course continued their trade undeterred: see, e.g. *Minutes of Select Committee to Inquire into the State of the Police of the Metropolis* (1816), p. 437 — "take watches; could get rid of them as readily as anything else . . . It must be a very good patent silver watch that fetched £2; a gold one £5 or £6". Receivers of stolen watches in Glasgow are said to have sold them in quantities in country districts in Ireland (1834): see J. E. Handley, *The Irish in Scotland, 1798-1845* (Cork, 1943), p. 253.

[48] "Winchester being one of the general rendezvous for the militia volunteers, has been a scene of riot, dissipation and absurd extravagence. It is supposed that nine-tenths of the bounties paid to these men, amounting to at least £20,000 were all spent on the spot among the public houses, milliners, watch-makers, hatters, &c. In more wantonness Bank notes were actually eaten between slices of bread and butter": *Monthly Magazine*, Sept. 1799.

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wages of the servant.[49] In some parts of the country Clock and Watch Clubs were set up — collective hire-purchase.[50] Moreover, the timepiece was the poor man's bank, an investment of savings: it could, in bad times, be sold or put in hock.[51] "This 'ere ticker", said one Cockney compositor in the 1820s, "cost me but a five-pun note ven I bort it fust, and I've popped it more than twenty times, and had more than forty poun' on it altogether. It's a garjian haingel to a fellar, is a good votch, ven you're hard up".[52]

Whenever any group of workers passed into a phase of improving living standards, the acquisition of timepieces was one of the first things noted by observers. In Radcliffe's well-known account of the golden age of the Lancashire handloom weavers in the 1790s the men had "each a watch in his pocket" and every house was "well furnished with a clock in elegant mahogany or fancy case".[53] In Manchester fifty years later the same point caught the reporter's eye:

> No Manchester operative will be without one a moment longer than he can help. You see, here and there, in the better class of houses, one of the old-fashioned metallic-faced eight-day clocks; but by far the most common article is the little Dutch machine, with its busy pendulum swinging openly and candidly before all the world.[54]

Thirty years later again it was the gold double watch-chain which was the symbol of the successful Lib-Lab trade union leader; and for fifty years of disciplined servitude to work, the enlightened employer gave to his employee an engraved gold watch.

IV

Let us return from the timepiece to the task. Attention to time in labour depends in large degree upon the need for the synchronization of labour. But in so far as manufacturing industry remained conducted upon a domestic or small workshop scale, without intricate subdivision of processes, the degree of synchronization demanded

[49] Witnesses before the Select Committee of 1817 complained that inferior wares (sometimes known as "Jew watches") were touted in country fairs and sold to the gullible at mock auctions: *P.P.*, 1817, vi, pp. 15-16.

[50] Benjamin Smith, *Twenty-four Letters from Labourers in America to their Friends in England* (London, 1829), p. 48: the reference is to parts of Sussex — twenty people clubbed together (as in a Cow Club) paying 5s. each for twenty successive weeks, drawing lots each for one £5 time-piece.

[51] *P.P.*, 1817, vi, pp. 19, 22.

[52] [C. M. Smith], *The Working Man's Way in the World* (London, 1853), pp. 67-8.

[53] W. Radcliffe, *The Origin of Power Loom Weaving* (Stockport, 1828), p. 167.

[54] *Morning Chronicle*, 25 Oct. 1849. But in 1843 J. R. Porter, *The Progress of the Nation*, iii, p. 5 still saw the possession of a clock as "the certain indication of prosperity and of personal respectability on the part of the working man".

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was slight, and task-orientation was still prevalent.[55] The putting-out system demanded much fetching, carrying, waiting for materials. Bad weather could disrupt not only agriculture, building and transport, but also weaving, where the finished pieces had to be stretched on the tenters to dry. As we get closer to each task, we are surprised to find the multiplicity of subsidiary tasks which the same worker or family group must do in one cottage or workshop. Even in larger workshops men sometimes continued to work at distinct tasks at their own benches or looms, and — except where the fear of the embezzlement of materials imposed stricter supervision — could show some flexibility in coming and going.

Hence we get the characteristic irregularity of labour patterns before the coming of large-scale machine-powered industry. Within the general demands of the week's or fortnight's tasks — the piece of cloth, so many nails or pairs of shoes — the working day might be lengthened or shortened. Moreover, in the early development of manufacturing industry, and of mining, many mixed occupations survived: Cornish tinners who also took a hand in the pilchard fishing; Northern lead-miners who were also smallholders; the village craftsmen who turned their hands to various jobs, in building, carting, joining; the domestic workers who left their work for the harvest; the Pennine small-farmer/weaver.

It is in the nature of such work that accurate and representative time-budgets will not survive. But some extracts from the diary of one methodical farming weaver in 1782-83 may give us an indication of the variety of tasks. In October 1782 he was still employed in harvesting, and threshing, alongside his weaving. On a rainy day he might weave $8\frac{1}{2}$ or 9 yards; on October 14th he carried his finished piece, and so wove only $4\frac{3}{4}$ yards; on the 23rd he "worked out" till 3 o'clock, wove two yards before sun set, "clouted [mended] my coat in the evening". On December 24th "wove 2 yards before 11 o'clock. I was laying up the coal heap, sweeping the roof and walls of the

[55] For some of the problems discussed in this and the following section, see especially Keith Thomas, "Work and Leisure in Pre-Industrial Societies", *Past and Present*, no. 29 (Dec. 1964). Also C. Hill, "The Uses of Sabbatarianism", in *Society and Puritanism in Pre-Revolutionary England* (London, 1964); E. S. Furniss, *The Position of the Laborer in a System of Nationalism* (Boston, 1920: repr. New York, 1965); D. C. Coleman, "Labour in the English Economy of the Seventeenth Century", *Econ. Hist. Rev.*, 2nd ser., viii (1955-6); S. Pollard, "Factory Discipline in the Industrial Revolution", *Econ. Hist. Rev.*, 2nd ser., xvi (1963-4); T. S. Ashton, *An Economic History of England in the Eighteenth Century* (London, 1955), ch. vii; W. E. Moore, *Industrialization and Labor* (New York, 1951); and B. F. Hoselitz and W. E. Moore, *Industrialization and Society* (UNESCO, 1963).

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kitchen and laying the muck miding [midden?] till 10 o'clock at night". Apart from harvesting and threshing, churning, ditching and gardening, we have these entries:

January 18, 1783:	"I was employed in preparing a Calf stall & Fetching the Tops of three Plain Trees home which grew in the Lane and was that day cut down & sold to john Blagbrough."
January 21st:	"Wove 2¾ yards the Cow having calved she required much attendance". (On the next day he walked to Halifax to buy a medicine for the cow.)

On January 25th he wove 2 yards, walked to a nearby village, and did "sundry jobbs about the lathe and in the yard & wrote a letter in the evening". Other occupations include jobbing with a horse and cart, picking cherries, working on a mill dam, attending a Baptist association and a public hanging.[56]

This general irregularity must be placed within the irregular cycle of the working week (and indeed of the working year) which provoked so much lament from moralists and mercantilists in the seventeenth and eighteenth centuries. A rhyme printed in 1639 gives us a satirical version:

> You know that Munday is Sundayes brother;
> Tuesday is such another;
> Wednesday you must go to Church and pray;
> Thursday is half-holiday;
> On Friday it is too late to begin to spin;
> The Saturday is half-holiday agen.[57]

John Houghton, in 1681, gives us the indignant version:

> When the framework knitters or makers of silk stockings had a great price for their work, they have been observed seldom to work on Mondays and Tuesdays but to spend most of their time at the ale-house or nine-pins . . . The weavers, 'tis common with them to be drunk on Monday, have their head-ache on Tuesday, and their tools out of order on Wednesday. As for the shoemakers, they'll rather be hanged than not remember St. Crispin on Monday . . . and it commonly holds as long as they have a penny of money or pennyworth of credit.[58]

[56] MS. diaries of Cornelius Ashworth of Wheatley, in Halifax Ref. Lib.; see also T. W. Hanson, "The Diary of a Grandfather", *Trans. Halifax Antiq. Soc.*, 1916. M. Sturge Henderson, *Three Centuries in North Oxfordshire* (Oxford, 1902), pp. 133-46, 103, quotes similar passages (weaving, pig-killing, felling wood, marketing) from the diary of a Charlbury weaver, 1784, etc., but I have been unable to trace the original. It is interesting to compare time-budgets from more primitive peasant economies, e.g. Sol Tax, *Penny Capitalism — a Guatemalan Indian Economy* (Washington, 1953), pp. 104-5; George M. Foster, *A Primitive Mexican Economy* (New York, 1942), pp. 35-8; M. J. Herskovits, *The Economic Life of Primitive Peoples* (New York, 1940), pp. 72-9; Raymond Firth, *Malay Fishermen* (London, 1946), pp. 93-7.

[57] *Divers Crab-Tree Lectures* (1639), p. 126, cited in John Brand, *Observations on Popular Antiquities* (London, 1813), i, pp. 459-60. H. Bourne, *Antiquitates Vulgares* (Newcastle, 1725), pp. 115 f. declares that on Saturday afternoons in country places and villages "the Labours of the Plough Ceast, and Refreshment and Ease are over all the Village".

[58] J. Houghton, *Collection of Letters* (London, 1683 edn.), p. 177, cited in Furniss, *op. cit.*, p. 121.

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The work pattern was one of alternate bouts of intense labour and of idleness, wherever men were in control of their own working lives. (The pattern persists among some self-employed — artists, writers, small farmers, and perhaps also with students — today, and provokes the question whether it is not a "natural" human work-rhythm.) On Monday or Tuesday, according to tradition, the hand-loom went to the slow chant of *Plen-ty of Time, Plen-ty of Time*: on Thursday and Friday, *A day t'lat, A day t'lat.*[59] The temptation to lie in an extra hour in the morning pushed work into the evening, candle-lit hours.[60] There are few trades which are not described as honouring Saint Monday: shoemakers, tailors, colliers, printing workers, potters, weavers, hosiery workers, cutlers, all Cockneys. Despite the full employment of many London trades during the Napoleonic Wars, a witness complained that "we see Saint Monday so religiously kept in this great city . . . in general followed by a Saint Tuesday also".[61] If we are to believe "The Jovial Cutlers", a Sheffield song of the late eighteenth century, its observance was not without domestic tension:

How upon a good Saint Monday,
Sitting by the smithy fire,
Telling what's been done o't Sunday,
And in cheerful mirth conspire,
  Soon I hear the trap-door rise up,
  On the ladder stands my wife:
  "Damn thee, Jack, I'll dust thy eyes up,
  Thou leads a plaguy drunken life;
  Here thou sits instead of working,
  Wi' thy pitcher on thy knee;
  Curse thee, thou'd be always lurking.
  And I may slave myself for thee".

The wife proceeds, speaking "with motion quicker/Than my boring stick at a Friday's pace", to demonstrate effective consumer demand:

"See thee, look what stays I've gotten,
See thee, what a pair o' shoes;
Gown and petticoat half rotten,
Ne'er a whole stitch in my hose . . .".

and to serve notice of a general strike:

"Thou knows I hate to broil and quarrel,
But I've neither soap nor tea;
Od burn thee, Jack, forsake thy barrel,
Or nevermore thou'st lie wi' me".[62]

[59] T. W. Hanson, *op. cit.*, p. 234.

[60] J. Clayton, *Friendly Advice to the Poor* (Manchester, 1755), p. 36.

[61] *Report of the Trial of Alexander Wadsworth against Peter Laurie* (London, 1811), p. 21. The complaint is particularly directed against the Saddlers.

[62] *The Songs of Joseph Mather* (Sheffield, 1862), pp. 88-90. The theme appears to have been popular with ballad-makers. A Birmingham example, "Fuddling Day, or Saint Monday" (for which I am indebted to Mr. Charles Parker) runs: (*contd. on p.* 74).

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Saint Monday, indeed, appears to have been honoured almost universally wherever small-scale, domestic, and outwork industries existed; was generally found in the pits; and sometimes continued in manufacturing and heavy industry.[63] It was perpetuated, in England, into the nineteenth — and, indeed, into the twentieth[64] — centuries for complex economic and social reasons. In some trades, the small masters themselves accepted the institution, and employed Monday in taking-in or giving-out work. In Sheffield, where the cutlers had for centuries tenaciously honoured the Saint, it had become "a settled habit and custom" which the steel-mills themselves honoured (1874):

> This Monday idleness is, in some cases, enforced by the fact that Monday is the day that is taken for repairs to the machinery of the great steelworks.[65]

Where the custom was deeply-established, Monday was the day set aside for marketing and personal business. Also, as Duveau suggests of French workers, "le dimanche est le jour de la famille, le lundi celui de l'amitié"; and as the nineteenth-century advanced, its celebration was something of a privilege of status of the better-paid artisan.[66]

(*note* 62 *contd.*)

Saint Monday brings more ills about,
For when the money's spent,
The children's clothes go up the spout,
Which causes discontent;
And when at night he staggers home,
He knows not what to say,
A fool is more a man than he
Upon a fuddling day.

[63] It was honoured by Mexican weavers in 1800: see Jan Bazant, "Evolution of the textile industry of Puebla, 1544-1845", *Comparative Studies in Society and History*, viii (1964), p. 65. Valuable accounts of the custom in France in the 1850s and 1860s are in George Duveau, *La Vie Ouvrière en France sous le Second Empire* (Paris, 1946), pp. 242-8, and P. Pierrard, *La Vie Ouvrière à Lille sous le Second Empire* (Paris, 1965), pp. 165-6. Edward Young, conducting a survey of labour conditions in Europe, with the assistance of U.S. consuls, mentions the custom in France, Belgium, Prussia, Stockholm, etc. in the 1870s: E. Young, *Labour in Europe and America* (Washington, 1875), pp. 576, 661, 674, 685, &c.

[64] Notably in the pits. An old Yorkshire miner informs me that in his youth it was a custom on a bright Monday morning to toss a coin in order to decide whether or not to work. I have also been told that "Saint Monday" is still honoured (1967) in its pristine purity by a few coopers in Burton-on-Trent.

[65] E. Young, *op. cit.*, pp. 408-9 (Report of U.S. Consul). Similarly, in some mining districts, "Pay Monday" was recognized by the employers, and the pits were only kept open for repairs: on Monday, only "dead work is going on", *Report of the Select Committee on the Scarcity and Dearness of Coal, P.P.*, 1873, x, QQ 177, 201-7.

[66] Duveau, *op. cit.*, p. 247. "A Journeyman Engineer" (T. Wright) devotes a whole chapter to "Saint Monday" in his *Some Habits and Customs of the Working Classes* (London, 1867), esp. pp. 112-6, under the mistaken impression that the institution was "comparatively recent", and consequent upon steam power giving rise to "a numerous body of highly skilled and highly paid workmen" — notably engineers!

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It is, in fact, in an account by "An Old Potter" published as late as 1903 that we have some of the most perceptive observations on the irregular work-rhythms which continued on the older pot-banks until the mid-century. The potters (in the 1830s and 1840s) "had a devout regard for Saint Monday". Although the custom of annual hiring prevailed, the actual weekly earnings were at piece-rates, the skilled male potters employing the children, and working, with little supervision, at their own pace. The children and women came to work on Monday and Tuesday, but a "holiday feeling" prevailed and the day's work was shorter than usual, since the potters were away a good part of the time, drinking their earnings of the previous week. The children, however, had to prepare work for the potter (for example, handles for pots which he would throw), and all suffered from the exceptionally long hours (fourteen and sometimes sixteen hours a day) which were worked from Wednesday to Saturday:

> I have since thought that but for the reliefs at the beginning of the week for the women and boys all through the pot-works, the deadly stress of the last four days could not have been maintained.

"An Old Potter", a Methodist lay preacher of Liberal-Radical views, saw these customs (which he deplored) as a consequence of the lack of mechanization of the pot-banks; and he argued that the same indiscipline in daily work influenced the entire way-of-life and the working-class organizations of the Potteries. "Machinery means discipline in industrial operations":

> If a steam-engine had started every Monday morning at six o'clock, the workers would have been disciplined to the habit of regular and continuous industry . . . I have noticed, too, that machinery seems to lead to habits of calculation. The Pottery workers were woefully deficient in this matter; they lived like children, without any calculating forecast of their work or its result. In some of the more northern counties this habit of calculation has made them keenly shrewd in many conspicuous ways. Their great co-operative societies would never have arisen to such immense and fruitful development but for the calculating induced by the use of machinery. A machine worked so many hours in the week would produce so much length of yarn or cloth. Minutes were felt to be factors in these results, whereas in the Potteries hours, or even days at times, were hardly felt to be such factors. There were always the mornings and nights of the last days of the week, and these were always trusted to make up the loss of the week's early neglect.[67]

[67] "An Old Potter", *When I was a Child* (London, 1903), pp. 16, 47-9, 52-4, 57-8, 71, 74-5, 81, 185-6, 191. Mr. W. Sokol, of the University of Wisconsin, has directed my attention to many cases reported in the *Staffordshire Potteries Telegraph* in 1853-4, where the employers succeeded in fining or imprisoning workers who neglected work, often on Mondays and Tuesdays. These actions were taken on the pretext of breach of contract (the annual hiring), for which see Daphne Simon, "Master and Servant", in *Democracy and the Labour Movement*, ed. J. Saville (London, 1954). Despite this campaign of prosecutions, the custom of keeping Saint Monday is still noted in the *Report of the Children's Employment Commission, P.P.*, 1863, xviii, pp. xxvii-xxviii.

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This irregular working rhythm is commonly associated with heavy week-end drinking: Saint Monday is a target in many Victorian temperance tracts. But even the most sober and self-disciplined artisan might feel the necessity for such alternations. "I know not how to describe the sickening aversion which at times steals over the working man and utterly disables him for a longer or shorter period, from following his usual occupation", Francis Place wrote in 1829; and he added a footnote of personal testimony:

> For nearly six years, whilst working, when I had work to do, from twelve to eighteen hours a day, when no longer able, from the cause mentioned, to continue working, I used to run from it, and go as rapidly as I could to Highgate, Hampstead, Muswell-hill, or Norwood, and then "return to my vomit" . . . This is the case with every workman I have ever known; and in proportion as a man's case is hopeless will such fits more frequently occur and be of longer duration.[68]

We may, finally, note that the irregularity of working day and week were framed, until the first decades of the nineteenth century, within the larger irregularity of the working year, punctuated by its traditional holidays, and fairs. Still, despite the triumph of the Sabbath over the ancient saints' days in the seventeenth century,[69] the people clung tenaciously to their customary wakes and feasts, and may even have enlarged them both in vigour and extent.[70] But a discussion of this problem, and of the psychic needs met by such intermittent festivals, must be left to another occasion.

How far can this argument be extended from manufacturing industry to the rural labourers? On the face of it, there would seem to be unrelenting daily and weekly labour here: the field labourer had no Saint Monday. But a close discrimination of different work situations is still required. The eighteenth- (and nineteenth-) century village had its own self-employed artisans, as well as many employed on irregular task work.[71] Moreover, in the unenclosed

[68] F. Place, *Improvement of the Working People* (1834), pp. 13-15: Brit. Mus., Add. MS. 27825. See also John Wade, *History of the Middle and Working Classes*, 3rd edn. (London, 1835), pp. 124-5.

[69] See C. Hill, *op. cit.*

[70] Clayton, *op. cit.*, p. 13, claimed that "common custom has established so many Holy-days, that few of our manufacturing work-folks are closely and regularly employed above two-third parts of their time". See also Furniss, *op. cit.*, pp. 44-5, and the abstract of my paper in the *Bulletin of the Society for the Study of Labour History*, no. 9, 1964.

[71] "We have four or five little farmers . . . we have a bricklayer, a carpenter, a blacksmith, and a miller, all of whom . . . are in a very frequent habit of drinking the King's health . . . Their employment is unequal; sometimes they are full of business, and sometimes they have none; generally they have many leisure hours, because . . . the hardest part [of their work] devolves to some men whom they hire . . .", "A Farmer", describing his own village (see note 77 below), in 1798.

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countryside, the classical case against open-field and common was in its inefficiency and wastefulness of time, for the small farmer or cottager:

> . . . if you offer them work, they will tell you that they must go to look up their sheep, cut furzes, get their cow out of the pound, or, perhaps, say they must take their horse to be shod, that he may carry them to a horse-race or cricket-match. (Arbuthnot, 1773)

> In sauntering after his cattle, he acquires a habit of indolence. Quarter, half, and occasionally whole days are imperceptibly lost. Day labour becomes disgusting . . . . (Report on Somerset, 1795)

> When a labourer becomes possessed of more land than he and his family can cultivate in the evenings . . . the farmer can no longer depend on him for constant work . . . . (*Commercial & Agricultural Magazine*, 1800)[72]

To this we should add the frequent complaints of agricultural improvers as to the time wasted, both at seasonal fairs, and (before the arrival of the village shop) on weekly market-days.[73]

The farm-servant, or the regular wage-earning field labourer, who worked, unremittingly, the full statute hours or longer, who had no common rights or land, and who (if not living-in) lived in a tied cottage, was undoubtedly subject to an intense labour discipline, whether in the seventeenth or the nineteenth century. The day of a ploughman (living-in) was described with relish by Markham in 1636:

> . . . the Plowman shall rise before four of the clock in the morning, and after thanks given to God for his rest, & prayer for the success of his labours, he shall go into his stable . . . .

After cleansing the stable, grooming his horses, feeding them, and preparing his tackle, he might breakfast (6–6-30 a.m.), he should plough until 2 p.m. or 3 p.m.; take half an hour for dinner; attend to his horses etc. until 6-30 p.m., when he might come in for supper:

> . . . and after supper, hee shall either by the fire side mend shooes both for himselfe and their Family, or beat and knock Hemp or Flax, or picke and stamp Apples or Crabs, for Cyder or Verdjuyce, or else grind malt on the quernes, pick candle rushes, or doe some Husbandly office within doors till it be full eight a clock . . . .

Then he must once again attend to his cattle and ("giving God thanks for benefits received that day") he might retire.[74]

Even so, we are entitled to show a certain scepticism. There are

[72] Cited in J. L. and B. Hammond, *The Village Labourer* (London, 1920), p. 13; E. P. Thompson, *The Making of the English Working Class* (London, 1963), p. 220.

[73] See e.g. *Annals of Agriculture*, xxvi (1796), p. 370 n.

[74] G. Markham, *The Inrichment of the Weald of Kent*, 10th edn. (London, 1660), pp. 115-7.

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obvious difficulties in the nature of the occupation. Ploughing is not an all-the-year-round task. Hours and tasks must fluctuate with the weather. The horses (if not the men) must be rested. There is the difficulty of supervision: Robert Loder's accounts indicate that servants (when out of sight) were not always employed upon their knees thanking God for their benefits: "men can worke yf they list & soe they can loyter".[75] The farmer himself must work exceptional hours if he was to keep all his labourers always employed.[76] And the farm-servant could assert his annual right to move on if he disliked his employment.

Thus enclosure and agricultural improvement were both, in some sense, concerned with the efficient husbandry of the time of the labour-force. Enclosure and the growing labour-surplus at the end of the eighteenth century tightened the screw for those who were in regular employment; they were faced with the alternatives of partial employment and the poor law, or submission to a more exacting labour discipline. It is a question, not of new techniques, but of a greater sense of time-thrift among the improving capitalist employers. This reveals itself in the debate between advocates of regularly-employed wage-labour and advocates of "taken-work" (i.e. labourers employed for particular tasks at piece-rates). In the 1790s Sir Mordaunt Martin censured recourse to taken-work

> which people agree to, to save themselves the trouble of watching their workmen: the consequence is, the work is ill done, the workmen boast at the ale-house what they can spend in "a waste against the wall", and make men at moderate wages discontented.

"A Farmer" countered with the argument that taken-work and regular wage-labour might be judiciously intermixed:

> Two labourers engage to cut down a piece of grass at two shillings or half-a-crown an acre; I send, with their scythes, two of my domestic farm-servants into the field; I can depend upon it, that their companions will keep them up to their work; and thus I gain . . . the same additional hours of labour from my domestic servants, which are voluntarily devoted to it by my hired servants.[77]

In the nineteenth century the debate was largely resolved in favour of

[75] Attempting to account for a deficiency in his stocks of wheat in 1617, Loder notes: "What should be the cause herof I know not, but it was in that yeare when R. Pearce & Alce were my servants, & then in great love (as it appeared too well) whether he gave it my horses . . . or how it went away, God onely knoweth". *Robert Loder's Farm Accounts*, ed. G. E. Fussell (Camden Soc., 3rd ser., liii, 1936), pp. 59, 127.

[76] For an account of an active farmer's day, see William Howitt, *Rural Life of England* (London, 1862), pp. 110-1.

[77] Sir Mordaunt Martin in *Bath and West and Southern Counties Society, Letters and Papers* (Bath, 1795), vii, p. 109; "A Farmer", "Observations on Taken-Work and Labour", *Monthly Magazine*, September 1798, May 1799.

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weekly wage-labour, supplemented by task-work as occasion arose. The Wiltshire labourer's day, as described by Richard Jeffries in the 1870s, was scarcely less long than that described by Markham. Perhaps in resistance to this unremitting toil he was distinguished by the "clumsiness of his walk" and "the deadened slowness which seems to pervade everything he does".[78]

The most arduous and prolonged work of all was that of the labourer's wife in the rural economy. One part of this — especially the care of infants — was the most task-orientated of all. Another part was in the fields, from which she must return to renewed domestic tasks. As Mary Collier complained in a sharp rejoinder to Stephen Duck:

> . . . when we Home are come,
> Alas! we find our Work but just begun;
> So many Things for our Attendance call,
> Had we ten Hands, we could employ them all.
> Our Children put to Bed, with greatest Care
> We all Things for your coming Home prepare:
> You sup, and go to Bed without delay,
> And rest yourselves till the ensuing Day;
> While we, alas! but little Sleep can have,
> Because our froward Children cry and rave . . . .
>
> In ev'ry Work (we) take our proper Share;
> And from the Time that Harvest doth begin
> Until the Corn be cut and carry'd in,
> Our Toil and Labour's daily so extreme,
> That we have hardly ever *Time to dream.*[79]

Such hours were endurable only because one part of the work, with the children and in the home, disclosed itself as necessary and inevitable, rather than as an external imposition. This remains true to this day, and, despite school times and television times, the rhythms of women's work in the home are not wholly attuned to the measurement of the clock. The mother of young children has an imperfect sense of time and attends to other human tides. She has not yet altogether moved out of the conventions of "pre-industrial" society.

V

I have placed "pre-industrial" in inverted commas: and for a reason. It is true that the transition to mature industrial society demands analysis in sociological as well as economic terms.

[78] J. R. Jefferies, *The Toilers of the Field* (London, 1892), pp. 84-8, 211-2.

[79] Mary Collier, now a Washer-woman, at Petersfield in Hampshire, *The Woman's Labour: an Epistle to Mr. Stephen Duck; in Answer to his late Poem, called The Thresher's Labour* (London, 1739), pp. 10-11.

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Concepts such as "time-preference" and the "backward sloping labour supply curve" are, too often, cumbersome attempts to find economic terms to describe sociological problems. But, equally, the attempt to provide simple models for one single, supposedly-neutral, technologically-determined, process known as "industrialization" (so popular today among well-established sociological circles in the United States)[80] is also suspect. It is not only that the highly-developed and technically-alert manufacturing industries (and the way-of-life supported by them) of France or England in the eighteenth century can only by semantic torture be described as "pre-industrial". (And such a description opens the door to endless false analogies between societies at greatly differing economic levels). It is also that there has never been any single type of "the transition". The stress of the transition falls upon the whole culture: resistance to change and assent to change arise from the whole culture. And this culture includes the systems of power, property-relations, religious institutions, etc., inattention to which merely flattens phenomena and trivializes analysis. Above all, the transition is not to "industrialism" *tout court* but to industrial capitalism or (in the twentieth century) to alternative systems whose features are still indistinct. What we are examining here are not only changes in manufacturing technique which demand greater synchronization of labour and a greater exactitude in time-routines in *any* society; but also these changes as they were lived through in the society of nascent industrial capitalism. We are concerned simultaneously with time-sense in its technological conditioning, and with time-measurement as a means of labour exploitation.

There are reasons why the transition was peculiarly protracted and fraught with conflict in England: among those which are often noted, England's was the first industrial revolution, and there were no Cadillacs, steel mills, or television sets to serve as demonstrations as to the object of the operation. Moreover, the preliminaries to the industrial revolution were so long that, in the manufacturing districts in the early eighteenth century, a vigorous and licensed popular culture had evolved, which the propagandists of discipline regarded with dismay. Josiah Tucker, the dean of Gloucester, declared in 1745 that "the *lower* class of people" were utterly degenerated. Foreigners (he sermonized) found "the *common people* of our *populous cities* to be the most *abandoned*, and *licentious* wretches on earth":

[80] See examples below, notes 126 and 127, and the valuable critique by Andre Gunder Frank, "Sociology of Development and Underdevelopment of Sociology", *Catalyst* (Buffalo, summer 1967).

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> Such brutality and insolence, such debauchery and extravagance, such idleness, irreligion, cursing and swearing, and contempt of all rule and authority . . . Our people are *drunk with the cup of liberty*.[81]

The irregular labour rhythms described in the previous section help us to understand the severity of mercantilist doctrines as to the necessity for holding down wages as a preventative against idleness, and it would seem to be not until the second half of the eighteenth century that "normal" capitalist wage incentives begin to become widely effective.[82] The confrontations over discipline have already been examined by others.[83] My intention here is to touch upon several points which concern time-discipline more particularly. The first is found in the extraordinary Law Book of the Crowley Iron Works. Here, at the very birth of the large-scale unit in manufacturing industry, the old autocrat, Crowley, found it necessary to design an entire civil and penal code, running to more than 100,000 words, to govern and regulate his refractory labour-force. The preambles to Orders Number 40 (the Warden at the Mill) and 103 (Monitor) strike the prevailing note of morally-righteous invigilation. From Order 40:

> I having by sundry people working by the day with the connivence of the clerks been horribly cheated and paid for much more time than in good conscience I ought and such hath been the baseness & treachery of sundry clerks that they have concealed the sloath & negligence of those paid by the day . . . .

And from Order 103:

> Some have pretended a sort of right to loyter, thinking by their readiness and ability to do sufficient in less time than others. Others have been so foolish to think bare attendance without being imployed in business is sufficient . . . . Others so impudent as to glory in their villany and upbrade others for their diligence . . . .

> To the end that sloath and villany should be detected and the just and diligent rewarded, I have thought meet to create an account of time by a Monitor, and do order and it is hereby ordered and declared from 5 to 8 and from 7 to 10 is fifteen hours, out of which take 1½ for breakfast, dinner, etc. There will then be thirteen hours and a half neat service . . . .

This service must be calculated "after all deductions for being at taverns, alehouses, coffee houses, breakfast, dinner, playing, sleeping, smoaking, singing, reading of news history, quarelling, contention, disputes or anything forreign to my business, any way loytering".

[81] J. Tucker, *Six Sermons* (Bristol, 1772), pp. 70-1.

[82] The change is perhaps signalled at the same time in the ideology of the more enlightened employers: see A. W. Coats, "Changing attitudes to labour in the mid-eighteenth century", *Econ. Hist. Rev.*, 2nd ser., xi (1958-9).

[83] See Pollard, *op. cit.*; N. McKendrick, "Josiah Wedgwood and Factory Discipline", *Hist. Journal*, iv (1961); also Thompson, *op. cit.*, pp. 356-74.

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The Monitor and Warden of the Mill were ordered to keep for each day employee a time-sheet, entered to the minute, with "Come" and "Run". In the Monitor's Order, verse 31 (a later addition) declares:

> And whereas I have been informed that sundry clerks have been so unjust as to reckon by clocks going the fastest and the bell ringing before the hour for their going from business, and clocks going too slow and the bell ringing after the hour for their coming to business, and those two black traitors Fowell and Skellerne have knowingly allowed the same; it is therefore ordered that no person upon the account doth reckon by any other clock, bell, watch or dyall but the Monitor's, which clock is never to be altered but by the clock-keeper . . . .

The Warden of the Mill was ordered to keep the watch "so locked up that it may not be in the power of any person to alter the same". His duties also were defined in verse 8:

> Every morning at 5 a clock the Warden is to ring the bell for beginning to work, at eight a clock for breakfast, at half an hour after for work again, at twelve a clock for dinner, at one to work and at eight to ring for leaving work and all to be lock'd up.

His book of the account of time was to be delivered in every Tuesday with the following affidavit:

> This account of time is done without favour or affection, ill-will or hatred, & do really believe the persons above mentioned have worked in the service of John Crowley Esq the hours above charged.[84]

We are entering here, already in 1700, the familiar landscape of disciplined industrial capitalism, with the time-sheet, the time-keeper, the informers and the fines. Some seventy years later the same discipline was to be imposed in the early cotton mills (although the machinery itself was a powerful supplement to the time-keeper). Lacking the aid of machinery to regulate the pace of work on the pot-bank, that supposedly-formidable disciplinarian, Josiah Wedgwood, was reduced to enforcing discipline upon the potters in surprisingly muted terms. The duties of the Clerk of the Manufactory were:

> To be at the works the first in the morning, & settle the people to their business as they come in, — to encourage those who come regularly to their time, letting them know that their regularity is properly noticed, & distinguishing them by repeated marks of approbation, from the less orderly part of the workpeople, by presents or other marks suitable to their ages, &c.
>
> Those who come later than the hour appointed should be noticed, and if after repeated marks of disapprobation they do not come in due time, an account of the time they are deficient in should be taken, and so much of their wages stopt as the time comes to if they work by wages, and if they work by the piece they should after frequent notice be sent back to breakfast-time.[85]

[84] Order 103 is reproduced in full in *The Law Book of the Crowley Ironworks*, ed. M. W. Flinn (Surtees Soc., clxvii, 1957). See also Law Number 16, "Reckonings". Order Number 40 is in the "Law Book", Brit. Mus., Add. MS. 34555.

[85] MS. instructions, *circa* 1780, in Wedgwood MSS. (Barlaston), 26.19114.

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These regulations were later tightened somewhat:

> Any of the workmen forceing their way through the Lodge after the time alow'd by the Master forfeits 2/-d.[86]

and McKendrick has shown how Wedgwood wrestled with the problem at Etruria and introduced the first recorded system of clocking-in.[87] But it would seem that once the strong presence of Josiah himself was withdrawn the incorrigible potters returned to many of their older ways.

It is too easy, however, to see this only as a matter of factory or workshop discipline, and we may glance briefly at the attempt to impose "time-thrift" in the domestic manufacturing districts, and its impingement upon social and domestic life. Almost all that the masters *wished* to see imposed may be found in the bounds of a single pamphlet, the Rev. J. Clayton's *Friendly Advice to the Poor*, "written and publish'd at the Request of the late and present Officers of the Town of Manchester" in 1755. "If the *sluggard hides his hands* in his bosom, rather than applies them to work; if he spends his Time in Sauntring, impairs his Constitution by Laziness, and dulls his Spirit by Indolence . . ." then he can expect only poverty as his reward. The labourer must not loiter idly in the market-place or waste time in marketing. Clayton complains that "the Churches and Streets [are] crowded with Numbers of Spectators" at weddings and funerals, "who in spight of the Miseries of their Starving Condition . . . make no Scruple of wasting the best Hours in the Day, for the sake of gazing . . .". The tea-table is "this shameful devourer of Time and Money". So also are wakes and holidays and the annual feasts of friendly societies. So also is "that slothful spending the Morning in Bed":

> The necessity of early rising would reduce the poor to a necessity of going to Bed betime; and thereby prevent the Danger of Midnight revels.

Early rising would also "introduce an exact Regularity into their Families, a wonderful Order into their Oeconomy".

The catalogue is familiar, and might equally well be taken from Baxter in the previous century. If we can trust Bamford's *Early Days*, Clayton failed to make many converts from their old way of

[86] "Some regulations and rules made for this manufactory more than 30 years back", dated *circa* 1810, in Wedgwood MSS. (Keele University), 4045.5.

[87] A "tell-tale" clock is preserved at Barlaston, but these "tell-tales" (manufactured by John Whitehurst of Derby from about 1750) served only to ensure the regular patrol and attendance of night-watchmen, etc. The first printing time-recorders were made by Bundy in the U.S.A. in 1885. F. A. B. Ward, *op. cit.*, p. 49; also T. Thomson's *Annals of Philosophy*, vi (1815), pp. 418-9; vii (1816), p. 160; Charles Babbage, *On the Economy of Machinery and Manufacturers* (London, 1835), pp. 28, 40; E. Bruton, *op. cit.*, pp. 95-6.

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life among the weavers. Nevertheless, the long dawn chorus of moralists is prelude to the quite sharp attack upon popular customs, sports, and holidays which was made in the last years of the eighteenth century and the first years of the nineteenth.

One other non-industrial institution lay to hand which might be used to inculcate "time-thrift": the school. Clayton complained that the streets of Manchester were full of "idle ragged children; who are not only losing their Time, but learning habits of gaming", etc. He praised charity schools as teaching Industry, Frugality, Order and Regularity: "the Scholars here are obliged to rise betimes and to observe Hours with great Punctuality".[88] William Temple, when advocating, in 1770, that poor children be sent at the age of four to work-houses where they should be employed in manufactures and given two hours' schooling a day, was explicit about the socializing influence of the process:

> There is considerable use in their being, somehow or other, constantly employed at least twelve hours a day, whether they earn their living or not; for by these means, we hope that the rising generation will be so habituated to constant employment that it would at length prove agreeable and entertaining to them . . . .[89]

Powell, in 1772, also saw education as a training in the "habit of industry"; by the time the child reached six or seven it should become "habituated, not to say naturalized to Labour and Fatigue".[90] The Rev. William Turner, writing from Newcastle in 1786, recommended Raikes' schools as "a spectacle of order and regularity", and quoted a manufacturer of hemp and flax in Gloucester as affirming that the schools had effected an extraordinary change: "they are . . . become more tractable and obedient, and less quarrelsome and revengeful".[91] Exhortations to punctuality and regularity are written into the rules of all the early schools:

> Every scholar must be in the school-room on Sundays, at nine o'clock in the morning, and at half-past one in the afternoon, or she shall lose her place the next Sunday, and walk last.[92]

Once within the school gates, the child entered the new universe of disciplined time. At the Methodist Sunday Schools in York the teachers were fined for unpunctuality. The first rule to be learned by the scholars was:

> I am to be present at the School . . . a few minutes before half-past nine o'clock . . . .

[88] Clayton, *loc. cit.*, pp. 19, 42-3.
[89] Cited in Furniss, *op. cit.*, p. 114.
[90] Anon. [Powell], *A View of Real Grievances* (London, 1772), p. 90.
[91] W. Turner, *Sunday Schools Recommended* (Newcastle, 1786), pp. 23, 42.
[92] *Rules for the Methodist School of Industry at Pocklington, for the instruction of Poor Girls in Reading, Sewing, Knitting, and Marking* (York, 1819), p. 12.

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Once in attendance, they were under military rule:

> The Superintendent shall again ring, — when, on a motion of his hand, the whole School rise at once from their seats; — on a second motion, the Scholars turn; — on a third, slowly and silently move to the place appointed to repeat their lessons, — he then pronounces the word "Begin" . . . .[93]

The onslaught, from so many directions, upon the people's old working habits was not, of course, uncontested. In the first stage, we find simple resistance.[94] But, in the next stage, as the new time-discipline is imposed, so the workers begin to fight, not against time, but about it. The evidence here is not wholly clear. But in the better-organized artisan trades, especially in London, there is no doubt that hours were progressively shortened in the eighteenth century as combination advanced. Lipson cites the case of the London tailors whose hours were shortened in 1721, and again in 1768: on both occasions the mid-day intervals allowed for dinner and drinking were also shortened — the day was compressed.[95] By the end of the eighteenth century there is some evidence that some favoured trades had gained something like a ten-hour day.

Such a situation could only persist in exceptional trades and in a favourable labour market. A reference in a pamphlet of 1827 to "the English system of working from 6 o'clock in the morning to 6 in the evening"[96] may be a more reliable indication as to the general expectation as to hours of the mechanic and artisan outside London in the 1820s. In the dishonourable trades and outwork industries hours (when work was available) were probably moving the other way.

It was exactly in those industries — the textile mills and the engineering workshops — where the new time-discipline was most rigorously imposed that the contest over time became most intense. At first some of the worst masters attempted to expropriate the workers of all knowledge of time. "I worked at Mr. Braid's mill", declared one witness:

[93] *Rules for the Government, Superintendence, and Teaching of the Wesleyan Methodist Sunday Schools, York* (York, 1833). See also Harold Silver, *The Concept of Popular Education* (London, 1965), pp. 32-42; David Owen, *English Philanthrophy, 1660-1960* (Cambridge, Mass., 1965), pp. 23-7.

[94] The best account of the employers' problem is in S. Pollard, *The Genesis of Modern Management* (London, 1965), ch. v, "The Adaptation of the Labour Force".

[95] E. Lipson, *The Economic History of England*, 6th edn. (London, 1956), iii, pp. 404-6. See e.g. J. L. Ferri, *Londres et les Anglais* (Paris, An xii), i, pp. 163-4. Some of the evidence as to hours is discussed in G. Langenfelt, *The Historic Origin of the Eight Hours Day* (Stockholm, 1954).

[96] *A Letter on the Present State of the Labouring Classes in America*, by an intelligent Emigrant at Philadelphia (Bury, 1827).

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> There we worked as long as we could see in summer time, and I could not say at what hour it was that we stopped. There was nobody but the master and the master's son who had a watch, and we did not know the time. There was one man who had a watch . . . It was taken from him and given into the master's custody because he had told the men the time of day . . . .[97]

A Dundee witness offers much the same evidence:

> . . . in reality there were no regular hours: masters and managers did with us as they liked. The clocks at the factories were often put forward in the morning and back at night, and instead of being instruments for the measurement of time, they were used as cloaks for cheatery and oppression. Though this was known amongst the hands, all were afraid to speak, and a workman then was afraid to carry a watch, as it was no uncommon event to dismiss any one who presumed to know too much about the science of horology.[98]

Petty devices were used to shorten the dinner hour and to lengthen the day. "Every manufacturer wants to be a gentleman at once", said a witness before Sadler's Committee:

> and they want to nip every corner that they can, so that the bell will ring to leave off when it is half a minute past time, and they will have them in about two minutes before time . . . If the clock is as it used to be, the minute hand is at the weight, so that as soon as it passes the point of gravity, it drops three minutes all at once, so that it leaves them only twenty-seven minutes, instead of thirty.[99]

A strike-placard of about the same period from Todmorden put it more bluntly: "if that piece of dirty suet, 'old Robertshaw's engine-tenter', do not mind his own business, and let ours alone, we will shortly ask him how long it is since he received a gill of ale for running 10 minutes over time".[100] The first generation of factory workers were taught by their masters the importance of time; the second generation formed their short-time committees in the ten-hour movement; the third generation struck for overtime or time-and-a-half. They had accepted the categories of their employers and learned to fight back within them. They had learned their lesson, that time is money, only too well.[101]

VI

We have seen, so far, something of the external pressures which enforced this discipline. But what of the internalization of this

[97] Alfred [S. Kydd], *History of the Factory Movement* . . . (London, 1857), i, p. 283, quoted in P. Mantoux, *The Industrial Revolution in the Eighteenth Century* (London, 1948), p. 427.

[98] Anon: *Chapters in the Life of a Dundee Factory Boy* (Dundee, 1887), p. 10.

[99] *P.P.*, 1831-32, xv, pp. 177-8. See also the example from the Factory Commission (1833) in Mantoux, *op. cit.*, p. 427.

[100] Placard in my possession.

[101] For a discussion of the next stage, when the workers had learned "the rules of the game", see E. J. Hobsbawm, *Labouring Men* (London, 1964), ch. xvii, "Custom, Wages and Work-load".

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discipline? How far was it imposed, how far assumed? We should, perhaps, turn the problem around once again, and place it within the evolution of the Puritan ethic. One cannot claim that there was anything radically new in the preaching of industry or in the moral critique of idleness. But there is perhaps a new insistence, a firmer accent, as those moralists who had accepted this new discipline for themselves enjoined it upon the working people. Long before the pocket watch had come within the reach of the artisan, Baxter and his fellows were offering to each man his own interior moral time-piece.[102] Thus Baxter, in his *Christian Directory*, plays many variations on the theme of Redeeming the Time: "use every minute of it as a most precious thing, and spend it wholly in the way of duty". The imagery of time as currency is strongly marked, but Baxter would seem to have an audience of merchants and of tradesmen in his mind's eye:

> Remember how gainful the Redeeming of Time is . . . in Merchandize, or any trading; in husbandry or any gaining course, we use to say of a man that hath grown rich by it, that he hath made use of his Time.[103]

Oliver Heywood, in *Youth's Monitor* (1689), is addressing the same audience:

> Observe exchange-time, look to your markets; there are some special seasons, that will favour you in expediting your business with facility and success; there are nicks of time, in which, if your actions fall, they may set you forward apace: seasons of doing or receiving good last not always; the fair continues not all the year . . . .[104]

The moral rhetoric passes swiftly between two poles. On the one hand, apostrophes to the brevity of the mortal span, when placed beside the certainty of Judgement. Thus Heywood's *Meetness for Heaven* (1690):

> Time lasts not, but floats away apace; but what is everlasting depends upon it. In this world we either win or lose eternal felicity. The great weight of eternity hangs on the small and brittle thread of life . . . This is our working day, our market time . . . O Sirs, sleep now, and awake in hell, whence there is no redemption.

Or, from *Youth's Monitor* again: time "is too precious a commodity to be undervalued . . . This is the golden chain on which hangs a massy eternity; the loss of time is unsufferable, because irrecoverable".[105] Or from Baxter's *Directory*:

[102] John Preston used the image of clock-work in 1628: "In this curious clocke-worke of religion, every pin and wheel that is amisse distempers all": *Sermons Preached before His Majestie* (London, 1630), p. 18. Cf. R. Baxter, *A Christian Directory* (London, 1673), i, p. 285: "A wise and well skilled Christian should bring his matters into such order, that every ordinary duty should know his place, and all should be . . . as the parts of a Clock or other Engine, which must be all conjunct, and each right placed".

[103] *Ibid.*, i, pp. 274-5, 277.

[104] *The Whole Works of the Rev. Oliver Heywood* (Idle, 1826), v, p. 575.

[105] *Ibid.*, v, pp. 286-7, 574; see also p. 562.

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> O where are the brains of those men, and of what metal are their hardened hearts made, that can idle and play away that Time, that little Time, that only Time, which is given them for the everlasting saving of their souls?[106]

On the other hand, we have the bluntest and most mundane admonitions on the husbandry of time. Thus Baxter, in *The Poor Man's Family Book* advises: "Let the time of your Sleep be so much only as health requireth; For precious time is not to be wasted in unnecessary sluggishness": "quickly dress you"; "and follow your labours with constant diligence".[107] Both traditions were extended, by way of Law's *Serious Call*, to John Wesley. The very name of "the Methodists" emphasizes this husbandry of time. In Wesley also we have these two extremes — the jabbing at the nerve of mortality, the practical homily. It was the first (and not hell-fire terrors) which sometimes gave an hysterical edge to his sermons, and brought converts to a sudden sense of sin. He also continues the time-as-currency imagery, but less explicitly as merchant or market-time:

> See that ye walk circumspectly, says the Apostle . . . redeeming the time; saving all the time you can for the best purposes; buying up every fleeting moment out of the hands of sin and Satan, out of the hands of sloth, ease, pleasure, worldly business . . . .

Wesley, who never spared himself, and until the age of eighty rose every day at 4 a.m. (he ordered that the boys at Kingswood School must do the same), published in 1786 as a tract his sermon on *The Duty and Advantage of Early Rising*: "By *soaking* . . . so long between warm sheets, the flesh is as it were parboiled, and becomes soft and flabby. The nerves, in the mean time, are quite unstrung". This reminds us of the voice of Isaac Watts' Sluggard. Wherever Watts looked in nature, the "busy little bee" or the sun rising at his "proper hour", he read the same lesson for unregenerate man.[108] Alongside the Methodists, the Evangelicals took up the theme. Hannah More contributed her own imperishable lines on "Early Rising":

> Thou silent murderer, Sloth, no more
> My mind imprison'd keep;
> Nor let me waste another hour
> With thee, thou felon Sleep.[109]

In one of her tracts, *The Two Wealthy Farmers*, she succeeds in bringing the imagery of time-as-currency into the labour-market:

[106] Baxter, *op. cit.*, i, p. 276.

[107] R. Baxter, *The Poor Man's Family Book*, 6th edn. (London, 1697), pp. 290-1.

[108] *Poetical Works of Isaac Watts, D.D.* (Cooke's Pocket edn., London, [1802]), pp. 224, 227, 232. The theme is not new, of course: Chaucer's Parson said: "Sleepinge longe in quiete is eek a great norice to Lecherie".

[109] H. More, *Works* (London, 1830), ii, p. 42. See also p. 35, "Time".

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> When I call in my labourers on a Saturday night to pay them, it often brings to my mind the great and general day of account, when I, and you, and all of us, shall be called to our grand and awful reckoning . . . When I see that one of my men has failed of the wages he should have received, because he has been idling at a fair; another has lost a day by a drinking-bout . . . I cannot help saying to myself, Night is come; Saturday night is come. No repentance or diligence on the part of these poor men can now make a bad week's work good. This week is gone into eternity.[110]

Long before the time of Hannah More, however, the theme of the zealous husbandry of time had ceased to be particular to the Puritan, Wesleyan, or Evangelical traditions. It was Benjamin Franklin, who had a life-long technical interest in clocks and who numbered among his acquaintances John Whitehurst of Derby, the inventor of the "tell-tale" clock, who gave to it its most unambiguous secular expression:

> Since our Time is reduced to a Standard, and the Bullion of the Day minted out into Hours, the Industrious know how to employ every Piece of Time to a real Advantage in their different Professions: And he that is prodigal of his Hours, is, in effect, a Squanderer of Money. I remember a notable Woman, who was fully sensible of the intrinsic Value of *Time*. Her Husband was a Shoemaker, and an excellent Craftsman, but never minded how the Minutes passed. In vain did she inculcate to him, *That Time is Money*. He had too much Wit to apprehend her, and it prov'd his Ruin. When at the Alehouse among his idle Companions, if one remark'd that the Clock struck Eleven, *What is that*, says he, *among us all?* If she sent him Word by the Boy, that it had struck Twelve; *Tell her to be easy, it can never be more*. If, that it had struck One, *Bid her be comforted, for it can never be less*.[111]

The reminiscence comes directly out of London (one suspects) where Franklin worked as a printer in the 1720s — but never, he reassures us in his *Autobiography*, following the example of his fellow-workers in keeping Saint Monday. It is, in some sense, appropriate that the ideologist who provided Weber with his central text in illustration of the capitalist ethic[112] should come, not from that Old World, but from the New — the world which was to invent the time-recorder, was to pioneer time-and-motion study, and was to reach its apogee with Henry Ford.[113]

[110] *Ibid.*, iii, p. 167.

[111] *Poor Richard's Almanac*, Jan. 1751, in *The Papers of Benjamin Franklin*, ed. L. W. Labaree and W. J. Bell (New Haven, 1961), iv, pp. 86-7.

[112] Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London, 1930), pp. 48-50 and *passim*.

[113] Ford commenced his career repairing watches: since there was a difference between local time and standard railroad time, he made a watch, with two dials, which kept both times — an ominous beginning: H. Ford, *My Life and Work* (London, 1923), p. 24.

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VII

In all these ways — by the division of labour; the supervision of labour; fines; bells and clocks; money incentives; preachings and schoolings; the suppression of fairs and sports — new labour habits were formed, and a new time-discipline was imposed. It sometimes took several generations (as in the Potteries), and we may doubt how far it was ever fully accomplished: irregular labour rhythms were perpetuated (and even institutionalized) into the present century, notably in London and in the great ports.[114]

Throughout the nineteenth century the propaganda of time-thrift continued to be directed at the working people, the rhetoric becoming more debased, the apostrophes to eternity becoming more shop-soiled, the homilies more mean and banal. In early Victorian tracts and reading-matter aimed at the masses one is choked by the quantity of the stuff. But eternity has become those never-ending accounts of pious death-beds (or sinners struck by lightning), while the homilies have become little Smilesian snippets about humble men who by early rising and diligence made good. The leisured classes began to discover the "problem" (about which we hear a good deal today) of the leisure of the masses. A considerable proportion of manual workers (one moralist was alarmed to discover) after concluding their work were left with

> several hours in the day to be spent nearly as they please. And in what manner . . . is this precious time expended by those of no mental cultivation? . . . We shall often see them just simply annihilating those portions of time. They will for an hour, or for hours together . . . sit on a bench, or lie down on a bank or hillock . . . yielded up to utter vacancy and torpor . . . or collected in groups by the road side, in readiness to find in whatever passes there occasions for gross jocularity; practising some impertinence, or uttering some jeering scurrility, at the expense of persons going by . . . .[115]

This, clearly, was worse than Bingo: non-productivity, compounded with impertinence. In mature capitalist society all time must be

[114] There is an abundant literature of nineteenth-century dockland which illustrates this. However, in recent years the casual labourer in the ports has ceased to be a "casualty" of the labour market (as Mayhew saw him) and is marked by his preference for high earnings over security: see K. J. W. Alexander, "Casual Labour and Labour Casualties", *Trans. Inst. of Engineers and Shipbuilders in Scotland* (Glasgow, 1964). I have not touched in this paper on the new occupational time-tables introduced in industrial society — notably night-shift workers (pits, railways, etc.): see the observations by "Journeyman Engineer" [T. Wright], *The Great Unwashed* (London, 1868), pp. 188-200; M. A. Pollock (ed.), *Working Days* (London, 1926), pp. 17-28; Tom Nairn, *New Left Review*, no. 34 (1965), p. 38.

[115] John Foster, *An Essay on the Evils of Popular Ignorance* (London, 1821), pp. 180-5.

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consumed, marketed, put to *use*; it is offensive for the labour force merely to "pass the time".

But how far did this propaganda really succeed? How far are we entitled to speak of any radical restructuring of man's social nature and working habits? I have given elsewhere some reasons for supposing that this discipline was indeed internalized, and that we may see in the Methodist sects of the early nineteenth century a figuration of the psychic crisis entailed.[116] Just as the new time-sense of the merchants and gentry in the Renaissance appears to find one expression in the heightened awareness of mortality, so, one might argue, the extension of this sense to the working people during the industrial revolution (together with the hazard and high mortality of the time) helps to explain the obsessive emphasis upon death in sermons and tracts whose consumers were among the working-class. Or (from a positive stand-point) one may note that as the industrial revolution proceeds, wage incentives and expanding consumer drives — the palpable rewards for the productive consumption of time and the evidence of new "predictive" attitudes to the future[117] — are evidently effective. By the 1830s and 1840s it was commonly observed that the English industrial worker was marked off from his fellow Irish worker, not by a greater capacity for hard work, but by his regularity, his methodical paying-out of energy, and perhaps also by a repression, not of enjoyments, but of the capacity to relax in the old, uninhibited ways.

There is no way in which we can quantify the time-sense of one, or of a million, workers. But it is possible to offer one check of a comparative kind. For what was said by the mercantilist moralists as to the failures of the eighteenth-century English poor to respond to incentives and disciplines is often repeated, by observers and by theorists of economic growth, of the peoples of developing countries today. Thus Mexican paeons in the early years of this century were regarded as an "indolent and child-like people". The Mexican mineworker had the custom of returning to his village for corn planting and harvest:

> His lack of initiative, inability to save, absences while celebrating too many holidays, willingness to work only three or four days a week if that paid for necessities, insatiable desire for alchohol — all were pointed out as proof of a natural inferiority.

He failed to respond to direct day-wage incentives, and (like the

[116] Thompson, *op. cit.*, chaps. xi and xii.

[117] See the important discussion of forecasting and predictive attitudes and their influence upon social and economic behaviour, in P. Bourdieu, *op. cit.*

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eighteenth-century English collier or tinner) responded better to contract and sub-contract systems:

> Given a contract and the assurance that he will get so much money for each ton he mines, and that it doesn't matter how long he takes doing it, or how often he sits down to contemplate life, he will work with a vigour which is remarkable.[118]

In generalizations supported by another study of Mexican labour conditions, Wilbert Moore remarks: "Work is almost always task-orientated in non-industrial societies . . . and . . . it may be appropriate to tie wages to tasks and not directly to time in newly developing areas".[119]

The problem recurs in a dozen forms in the literature of "industrialization". For the engineer of economic growth, it may appear as the problem of absenteeism — how is the Company to deal with the unrepentant labourer on the Cameroons plantation who declares: "How man fit work so, any day, any day, weh'e no take absen'? No be 'e go die?" ("How could a man work like that, day after day, without being absent? Would he not die?")[120]

> . . . the whole mores of African life, make a high and sustained level of effort in a given length of working day a greater burden both physically and psychologically than in Europe.[121]

> Time commitments in the Middle East or in Latin America are often treated somewhat casually by European standards; new industrial workers only gradually become accustomed to regular hours, regular attendance, and a regular pace of work; transportation schedules or the delivery of materials are not always reliable . . . .[122]

The problem may appear as one of adapting the seasonal rhythms of the countryside, with its festivals and religious holidays, to the needs of industrial production:

> The work year of the factory is necessarily in accord with the workers' demands, rather than an ideal one from the point of view of most efficient production. Several attempts by the managers to alter the work pattern have come to nil. The factory comes back to a schedule acceptable to the Cantelano.[123]

[118] Cited in M. D. Bernstein, *The Mexican Mining Industry, 1890-1950* (New York, 1964), ch. vii; see also M. Mead, *op. cit.*, pp. 179-82.

[119] W. E. Moore, *Industrialization and Labor* (Ithaca, 1951), p. 310, and pp. 44-7, 114-22.

[120] F. A. Wells and W. A. Warmington, *Studies in Industrialization: Nigeria and the Cameroons* (London, 1962), p. 128.

[121] *Ibid.*, p. 170. See also pp. 183, 198, 214.

[122] Edwin J. Cohn, "Social and Cultural Factors affecting the Emergence of Innovations", in *Social Aspects of Economic Development* (Economic and Social Studies Conference Board, Istanbul, 1964), pp. 105-6.

[123] Manning Nash, "The Recruitment of Wage Labor and the Development of New Skills", *Annals of the American Academy*, cccv (1956), pp. 27-8. See also Manning Nash, "The Reaction of a Civil-Religious Hierarchy to a Factory in Guatemala", *Human Organization*, xiii (1955), pp. 26-8, and B. Salz, *op. cit.* (note 6 above), pp. 94-114.

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Or it may appear as it did in the early years of the Bombay cotton-mills, as one of maintaining a labour force at the cost of perpetuating inefficient methods of production — elastic time-schedules, irregular breaks and meal-times, etc. Most commonly, in countries where the link between the new factory proletariat and their relatives (and perhaps land-holdings or rights to land) in the villages are much closer — and are maintained for much longer — than in the English experience, it appears as one of disciplining a labour force which is only partially and temporarily "committed" to the industrial way-of-life.[124]

The evidence is plentiful, and, by the method of contrast, it reminds us how far we have become habituated to different disciplines. Mature industrial societies of all varieties are marked by time-thrift and by a clear demarcation between "work" and "life".[125] But, having taken the problem so far, we may be permitted to moralize a little, in the eighteenth-century manner, ourselves. The point at issue is not that of the "standard-of-living". If the theorists of growth wish us to say so, then we may agree that the older popular culture was in many ways otiose, intellectually vacant, devoid of quickening, and plain bloody poor. Without time-discipline we could not have the insistent energies of industrial man; and whether this discipline comes in the forms of Methodism, or of Stalinism, or of nationalism, it will come to the developing world.

What needs to be said is not that one way of life is better than the other, but that this is a place of the most far-reaching conflict; that the historical record is not a simple one of neutral and inevitable

[124] W. E. Moore and A. S. Feldman (eds.) *Labor Commitment and Social Change in Developing Areas* (New York, 1960). Useful studies of adaptation and of absenteeism include W. Elkan, *An African Labour Force* (Kampala, 1956), esp. chaps. ii and iii; and F. H. Harbison and I. A. Ibrahim, "Some Labor Problems of Industrialization in Egypt", *Annals of the American Academy*, cccv (1956), pp. 114-29. M. D. Morris, *The Emergence of an Industrial Labor Force in India* (Berkeley, 1965) discounts the seriousness of the problems of discipline, absenteeism, seasonal fluctuations in employment, etc. in the Bombay cotton mills in the late nineteenth century, but at many points his arguments appear to be at odds with his own evidence: see pp. 85, 97, 102; see also C. A. Myers, *Labour Problems in the Industrialization of India* (Cambridge, Mass., 1958), ch. iii, and S. D. Mehta, "Professor Morris on Textile Labour Supply", *Indian Economic Journal*, i, no. 3 (1954), pp. 333-40. Professor Morris's "The Recruitment of an Industrial Labor Force in India, with British and American Comparisons", *Comparative Studies in Society and History*, ii (1960) flattens and misunderstands the British evidence. Useful studies of an only partially "committed" labour force are G. V. Rimlinger, "Autocracy and the early Russian Factory System", *Jour. Econ. Hist.*, xx (1960) and T. V. Von Laue, "Russian Peasants in the Factory", *ibid.*, xxi (1961).

[125] See G. Friedmann, "Leisure and Technological Civilization", *Int. Soc. Science Jour.*, xii (1960), pp. 509-21.

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technological change, but is also one of exploitation and of resistance to exploitation; and that values stand to be lost as well as gained. The rapidly-growing literature of the sociology of industrialization is like a landscape which has been blasted by ten years of moral drought: one must travel through many tens of thousands of words of parched a-historical abstraction between each oasis of human actuality. Too many of the Western engineers of growth appear altogether too smug as to the gifts of character-reformation which they bring in their hands to their backward brethren. The "structuring of a labour force", Kerr and Siegel tell us:

> . . . involves the setting of rules on times to work and not work, on method and amount of pay, on movement into and out of work and from one position to another. It involves rules pertaining to the maintenance of continuity in the work process . . . the attempted minimization of individual or organised revolt, the provision of view of the world, of ideological orientations, of beliefs . . . .[126]

Wilbert Moore has even drawn up a shopping-list of the "pervasive values and normative orientations of high relevance to the goal of social development" — "these changes in attitude and belief are 'necessary' if rapid economic and social development is to be achieved":

> Impersonality: judgement of merit and performance, not social background or irrelevant qualities.
> Specificity of relations in terms of both context and limits of interaction.
> Rationality and problem-solving.
> Punctuality.
> Recognition of individually limited but systematically linked interdependence.
> Discipline, deference to legitimate authority.
> Respect for property rights . . . .

These, with "achievement and mobility aspirations", are not, Professor Moore reassures us,

> suggested as a comprehensive list of the merits of modern man . . . The "whole man" will also love his family, worship his God, and express his aesthetic capacities. But he will keep each of these other orientations "in their place".[127]

It need cause no surprise that such "provision of ideological orientations" by the Baxters of the twentieth century should be welcome to the Ford Foundation. That they should so often appear in publications sponsored by UNESCO is less easily explained.

[126] C. Kerr and A. Siegel, "The Structuring of the Labor Force in Industrial Society: New Dimensions and New Questions", *Industrial and Labor Relations Review*, ii (1955), p. 163.

[127] E. de Vries and J. M. Echavarria (eds.), *Social Aspects of Economic Development in Latin America* (UNESCO, 1963), p. 237. See also my review of W. E. Moore, *Man, Time and Society* (New York, 1963), in *Peace News*, 26 June 1964.

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VIII

It is a problem which the peoples of the developing world must live through and grow through. One hopes that they will be wary of pat, manipulative models, which present the working masses only as an inert labour force. And there is a sense, also, within the advanced industrial countries, in which this has ceased to be a problem placed in the past. For we are now at a point where sociologists are discussing the "problem" of leisure. And a part of the problem is: how did it come to be a problem? Puritanism, in its marriage of convenience with industrial capitalism, was the agent which converted men to new valuations of time; which taught children even in their infancy to improve each shining hour; and which saturated men's minds with the equation, time is money.[128] One recurrent form of revolt within Western industrial capitalism, whether bohemian or beatnik, has often taken the form of flouting the urgency of respectable time-values. And the interesting question arises: if Puritanism was a necessary part of the work-ethos which enabled the industrialized world to break out of the poverty-stricken economies of the past, will the Puritan valuation of time begin to decompose as the pressures of poverty relax? Is it decomposing already? Will men begin to lose that restless urgency, that desire to consume time purposively, which most people carry just as they carry a watch on their wrists?

If we are to have enlarged leisure, in an automated future, the problem is not "how are men going to be able to *consume* all these additional time-units of leisure?" but "what will be the capacity for experience of the men who have this undirected time to live?" If we maintain a Puritan time-valuation, a commodity-valuation, then it is a question of how this time is put to *use*, or how it is exploited by the leisure industries. But if the purposive notation of time-use becomes less compulsive, then men might have to re-learn some of the arts of living lost in the industrial revolution: how to fill the interstices of their days with enriched, more leisurely, personal and social relations; how to break down once more the barriers between work and life. And hence would stem a novel dialectic in which some of the old aggressive energies and disciplines migrate to the newly-industrializing nations, while the old industrialized nations seek to rediscover modes of experience forgotton before written history begins:

[128] Suggestive comments on this equation are in Lewis Mumford and S. de Grazia, cited note 1 above; Paul Diesing, *Reason in Society* (Urbana, 1962), pp. 24-8; Hans Meyerhoff, *Time in Literature* (Univ. of California, 1955), pp. 106-19.

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> . . . the Nuer have no expression equivalent to "time" in our language, and they cannot, therefore, as we can, speak of time as though it were something actual, which passes, can be wasted, can be saved, and so forth. I do not think that they ever experience the same feeling of fighting against time or of having to co-ordinate activities with an abstract passage of time because their points of reference are mainly the activities themselves, which are generally of a leisurely character. Events follow a logical order, but they are not controlled by an abstract system, there being no autonomous points of reference to which activities have to conform with precision. Nuer are fortunate.[129]

Of course, no culture re-appears in the same form. If men are to meet both the demands of a highly-synchronized automated industry, and of greatly enlarged areas of "free time", they must somehow combine in a new synthesis elements of the old and of the new, finding an imagery based neither upon the seasons nor upon the market but upon human occasions. Punctuality in working hours would express respect for one's fellow workmen. And unpurposive passing of time would be behaviour which the culture approved.

It can scarcely find approval among those who see the history of "industrialization" in seemingly-neutral but, in fact, profoundly value-loaded terms, as one of increasing rationalization in the service of economic growth. The argument is at least as old as the industrial revolution. Dickens saw the emblem of Thomas Gradgrind ("ready to weigh and measure any parcel of human nature, and tell you exactly what it comes to") as the "deadly statistical clock" in his observatory, "which measured every second with a beat like a rap upon a coffin-lid". But rationalism has grown new sociological dimensions since Gradgrind's time. It was Werner Sombart who — using the same favourite image of the Clockmaker — replaced the God of mechanical materialism by the Entrepreneur:

> If modern economic rationalism is like the mechanism of a clock, someone must be there to wind it up.[130]

The universities of the West are today thronged with academic clocksmiths, anxious to patent new keys. But few have, as yet, advanced as far as Thomas Wedgwood, the son of Josiah, who designed a plan for taking the time and work-discipline of Etruria into the very workshops of the child's formative consciousness:

> My aim is high — I have been endeavouring some master stroke which should anticipate a century or two upon the large-paced progress of human improvement. Almost every prior step of its advance may be traced to the influence of superior characters. Now, it is my opinion, that in the education of the greatest of these characters, not more than one hour in ten has been

[129] E. Evans-Pritchard, *op. cit.*, p. 103.

[130] "Capitalism", *Encyclopaedia of the Social Sciences* (New York, 1953 edn.), iii, p. 205.

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> made to contribute to the formation of those qualities upon which this influence has depended. Let us suppose ourselves in possession of a detailed statement of the first twenty years of the life of some extraordinary genius; what a chaos of perceptions! . . . How many hours, days, months have been prodigally wasted in unproductive occupations! What a host of half formed impressions & abortive conceptions blended into a mass of confusion . . . .
>
> In the best regulated mind of the present day, had not there been, & is not there some hours every day passed in reverie, thought ungoverned, undirected?[131]

Wedgwood's plan was to design a new, rigorous, rational, closeted system of education: Wordsworth was proposed as one possible superintendent. His response was to write *The Prelude* — an essay in the growth of a poet's consciousness which was, at the same time, a polemic against —

> The Guides, the Wardens of our faculties,
> And Stewards of our labour, watchful men
> And skilful in the usury of time,
> Sages, who in their prescience would controul
> All accidents, and to the very road
> Which they have fashion'd would confine us down,
> Like engines . . . .[132]

For there is no such thing as economic growth which is not, at the same time, growth or change of a culture; and the growth of social consciousness, like the growth of a poet's mind, can never, in the last analysis, be planned.

University of Warwick *E. P. Thompson*

[131] Thomas Wedgwood to William Godwin, 31 July 1797, published in David Erdman's important article, "Coleridge, Wordsworth, and the Wedgwood Fund", *Bulletin of the New York Public Library*, lx (1956).

[132] *The Prelude* (London, 1805 edn.), book v, lines 377-83. See also draft in *Poetical Works of William Wordsworth*, ed. E. de Selincourt and Helen Darbishire (Oxford, 1959), v, p. 346.

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