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Tim Ingold

ABSTRACT. This article explores the impact of industrialization upon the concepts and experience of time and work. This has been viewed in terms of a transition from pre-industrial task-orientation to an organization of work based on clock time and disembedded from the field of workers' social relationships. It is argued here, to the contrary, that task-orientation remains central to the experience of work in industrial society, even though the reality of that experience is systematically denied by the 'Western' discourse of freedom and necessity. The argument is exemplified by reference to ethnographic studies of locomotive drivers. It is concluded that clock time is as alien to us as it is to the people of pre-industrial societies: the only difference is that we have to deal with it.

KEY WORDS • dwelling • industrialization • railways • time • work

Much anthropological discussion is couched in terms of a pervasive opposition between 'Westerners' and other, 'non-Western' people. Amongst other things, it is argued that Westerners have a specific attitude to time and work that is not shared by people in non-Western societies. I want to propose here that while the concepts of time and work have indeed acquired specific meanings through their implication in such key historical transitions as the rise of capitalism and the growth of industrial manufacture, there is nevertheless a sense in which none of us are Westerners, and that the challenge that non-Western perspectives present to Western modes of apprehension exists at the very heart of our *own* society, in the mismatch between our shared experience of dwelling in the lived-in world and the demands placed on us by external structures of production

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and control that seem to leave only a residual space, divorced from culture and social life, where we can truly be ourselves.

I shall proceed as follows. First, I consider the attitudes to work and time of people in 'traditional' or pre-industrial societies who still retain a large measure of control over the rhythms of their working lives. For such people, I suggest, time is intrinsic to the array of specific tasks that make up the pattern of quotidian activity of a community. I go on to show how the formal logic of capitalist production undermines this task-orientation by establishing an absolute division, in principle, between the domains of work and social life. This division, however, does not naturally conform to experience but is rather enforced, to varying degrees, against a resistance founded in the inevitability of people's mutual involvement in the concrete settings of practical activity. The very instruments (above all the industrial machine and the clock), that in theory serve to disengage the time and work of production from the current of social life, are in practice reappropriated by their operators in the process of production, not of commodities for the market, but of their own personal and social identities. To exemplify this point, I shall draw on some studies of one particular category of industrial workers, namely locomotive drivers. In conclusion, I argue that if we find the time-awareness of people in societies other than our own hard to grasp, this is not because it is strange to our experience, but rather because the political, economic and ideological apparatus of the 'West', with its peculiar conjunction of individual freedom and clockwork necessity, has made us, in a sense, strangers to ourselves.

Task-Orientation

Speaking of people in so-called primitive societies, Cato Wadel has observed that what is characteristic of these societies 'is not that activities we term as work are not conceptualized, but that these activities are conceptualized *in association with* social relations' (Wadel, 1979: 380). Or as Sahlin (1968: 80) puts it, 'a man [sic] works, produces, in his capacity as a social person, as a husband and father, brother and lineage mate, member of a clan, a village'. To see an activity as thus embedded in a social relation is to regard it as what I shall call a *task*. And of all the manifold tasks that make up the total current of activity in a community, there are none that can be set aside as belonging to a separate category of 'work', nor is there any separate status of being a 'worker'. For work is life, and any distinctions one might make within the course of life would be not between work and non-work, but between different

fields of activity, such as farming, cooking, child-minding, weaving and so on.

The same point applies quite generally in the pre-industrial world (Godelier, 1980). In Ancient Greece, for example, 'we do not find the idea of one great human function, work, encompassing all the trades, but rather that of a plurality of different ones, each constituting a particular type of action with its own particular product' (Vernant, 1983: 272). Every artisan trade – with its specific instruments, raw materials and products, its technical operations and the qualities required of its practitioners – was a separate system rather than part of an all-embracing division of labour. If there was any overarching division, it was not between work and leisure, but rather between the spheres of making and doing, *poiesis* and *praxis*, a division that subordinated the crafts of manufacture to the activities – including farming and warfare – of those who used the implements made.

What holds for the generalized category of work holds also for that of time. It is commonly observed, in ethnographic accounts of non-industrial societies, that the people described lack any concept that would correspond exactly to the idea of time current in the West. Here, for example, is Evans-Pritchard, writing in a justly celebrated passage about Nuer pastoralists of southern Sudan:

The Nuer have no expression equivalent to 'time' in our language, and they cannot, therefore, speak of time as though it were something which passes, can be wasted, 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 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. (Evans-Pritchard, 1940: 103)

Among the Nuer, then, as much more generally in the pre-industrial world, time is inseparable from the everyday round of activities. It is not something objective and external, *against* which tasks may be measured or *on* which they can be located, since it has no existence apart from the tasks themselves. Thus for 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' (1940: 101–2).

We may speak, then, of a *task-orientation* in such societies, an orientation in which both work and time are intrinsic to the conduct of life itself, and cannot be separated or abstracted from it. If you want to say

when something happened, you do so by relating it to another regular activity that took place concurrently – for example, ‘so-and-so arrived in the camp at milking time’. And if you want to say *how long* it took for something to happen, you do so by comparing it with how long something else takes. In a pioneering though now rather dated work on primitive time-reckoning, the Swedish anthropologist Martin Nilsson (1920: 42) wrote that:

To indicate the duration of time, primitive peoples make use of other means, *derived from their daily business* . . . in Madagascar, ‘rice-cooking’ often means half an hour, ‘the frying of a locust’, a moment. The Cross River natives say: ‘The man died in less than the time in which maize is not yet completely roasted’, i.e. less than about fifteen minutes; ‘the time in which one can cook a handful of vegetables’.

Likewise, in a classic paper about which I shall have more to say presently, the historian E.P. Thompson notes that in medieval England, duration could be expressed by how long it took to cook an egg, say a prayer or (apparently) to have a pee – though this latter time-span, known as ‘pissing while’, does seem ‘a somewhat arbitrary measurement’ (Thompson, 1967: 58).

I have spoken of tasks as socially embedded activities, but should pause to explain more precisely what I mean. First and foremost, tasks are activities carried out by persons, calling for greater or lesser degrees of technical skill. Machines don’t perform tasks, but people do. Thus with a task-orientation the human subject, equipped with a competence acquired through practising alongside more experienced hands, is situated right at the centre of productive activity. Second, tasks are defined primarily in terms of their objectives, without necessarily entailing any explicit codification of the rules and procedures to be followed in realizing them. And these objectives, far from being independently prescribed in the form of exercises in problem-solving (as in the entirely artificial tasks of ‘testing’ in the school or psychological laboratory), themselves arise through the agent’s involvement within the current of social life. Third, the particular kinds of tasks that a person performs are an index of his or her personal and social identity: the tasks you do depend on who you are, and in a sense the performance of certain tasks *makes* you the person you are. And, finally, tasks are never accomplished in isolation, but always within a setting that is itself constituted by the co-presence of others whose own performances necessarily have a bearing on one’s own. In other words, every task exists as part of what I have elsewhere termed a *taskscape*, understood as the total ensemble of tasks,

in their mutual interlocking, that make up the pattern of activity of a community (Ingold, 1993: 158).

Now if, in traditional societies, time is intrinsic to tasks, and if tasks are the technically skilled activities of particular persons with particular social identities, then it must follow that there can be no real distinction between work and social life and, moreover, that time is the movement or flow that inheres equally in both. What kind of time is this, that is thus inherent in the taskscape? In a landmark paper dating from 1937, the sociologists Pitrim Sorokin and Robert K. Merton called it *social time*. This kind of time, they argued, is qualitative and heterogeneous, something to which we can affix moral judgements such as good or bad. It is grounded in the 'rhythms, pulsations and beats' of everyday activities, and for that reason is also tied to the particular circumstances of the local community. 'Local time systems', write Sorokin and Merton, 'are qualitative, impressed with distinctively localised meanings' – indeed a person's integration within such a system may be an index of his or her very belonging to locality and community (Sorokin and Merton, 1937: 628).

But the rhythmic structure of social time not only emerges from the interweaving and mutual responsiveness of human movements, it also resonates to the cycles of the non-human environment. For traditionally, people had to *fall in* with the rhythms of their environment: with the winds, the tides, the needs of domestic animals, the alternations of day and night, of the seasons and so on, in accordance with what the environment afforded for the conduct of their daily tasks. As a song of the Kabyle peasant farmers of Algeria puts it: 'It is useless to pursue the world, no-one ever overtakes it' (Bourdieu, 1963). Similarly in Ancient Greece, the work of farming was regarded as a form of participation in an order at once natural and divine, and the artisan who supplied the farmer with his tools worked to a design that was inscribed within this order, and that was revealed in the raw material rather than artificially superimposed upon it (Vernant, 1983: 248–63). In short, the world *opens itself out* to the traditional artisan or farmer, in both its form and its temporal rhythms, through his or her action in it.

The idea that human industry can run ahead of nature, and in so doing, transform it, belongs to the modern era of Western thought (Godelier, 1980: 834). For the goal of modern technology has been to override the constraints of the natural world, to bring its forces under control, so that the rhythms of society can be brought into conformity with an imposed, artificially contrived schedule. Activities can now go on – as we say – 'around the clock'. Developments in the fields of transport and communications have had a decisive impact in this regard,

though probably no single innovation has been of greater consequence than the electric light. The effect was to install a new kind of time as the dominant regulator of human activity. Sorokin and Merton call it astronomical or *sidereal* time: 'uniform, homogeneous; . . . purely quantitative, shorn of qualitative variations' (1937: 621). This is the time spun by the planets in their regular revolutions around the sun, or by a perfectly functioning mechanical clock. As I shall now show, there is an intimate logical connection between this form of time and the estimation of work in terms of the generalized concept of labour.

The Temporal Logic of Capitalist Production

In 1967, E.P. Thompson published what has become a classic study of the effects of industrial capitalism on people's attitudes to time and work. After reviewing a great deal of evidence, he concluded that 'Mature industrial societies of all varieties are marked . . . by a clear demarcation between "work" and "life" ' (1967: 93). Of course he doesn't mean that workers are not alive when they work. The distinction being drawn here between living and working is really one between what *we* do, and what we are *caused* to do; between action that issues from ourselves as responsible social agents, and action that stems from the pressing of various trained bodily capacities into the service of a project that is not ours but is subject to the dictates of an alien will. It is a corollary of this view that life in an industrial society is lived in the activities of consumption rather than production, in the ways in which people take possession of, and use, the goods acquired with the money they earn. This implies that to understand the processes of social life in such a society we have to focus above all on what people are doing in those periods of each day when they are *not* under contract to an employer – that is, 'after business hours' (Sahlins, 1968: 80).

The separation between the domains of 'work' and 'social life' is, in fact, formally entailed by the logic of capitalist production. The defining principle of capitalism is the alienation of labour-power – the fact that a certain class of people, lacking direct access to the means to procure a livelihood, have to sell or rent out their very capacity to work to an employer, who owns the means of production, in return for a money wage with which they can purchase the necessities for their subsistence. People who have thus sold their capacity to work, their labour-power, are conventionally identified (within this context of capitalist class relations) as 'workers', and the activities in which they engage during that period when their labour-power is under the command of an

employer who has bought it are likewise identified as 'work'. In this situation, labour-power has become a commodity which, like other commodities, can be bought and sold. Moreover the worker, in person, is in principle divorced from the activity of production, since in that very activity her or his capacity to work is under the command not of her- or himself but of an employer. It follows that the domain of work relations, in which the labour-powers of several workers are combined in the factory or on the shop floor, is quite distinct from the domain of social life, in which workers may relate to one another as *persons*: as members of communities and as occupants of social roles. This is not to say that there are no social relations in the workplace, or to deny that they may exist side by side with co-operation in the labour process. It is to claim, however, that social relations are not themselves *constituted* by such co-operation.

How, following this formal logic, are we to understand the meanings of work and time in the context of industrial capitalism? To answer this question, a brief digression is called for on the concept of value. Following the example of Marx (1930: 27–8), this concept may be introduced by means of an analogy with the concept of weight. All objects of the most diverse kinds have weight, and can be placed in a quantitative ratio in terms of their weight. A bag of sugar is quite different from a rod of iron, but the one can perfectly substitute for the other if they balance on the scales. You can ask 'how much' something weighs, but not 'what kind' of weight it has. Likewise, a coat, a teapot and a chair are things of entirely different kinds, designed to satisfy different human wants. What each object affords, in situational contexts of use, is known as its 'use-value'. Regarded as commodities, however, these objects are exchangeable one for another, if not directly through barter then indirectly through the medium of money. If the coat fetches the same as the teapot, then they are perfectly substitutable even though their uses are quite different.

What is it, then, that inheres in all these objects, so manifestly different from one another, that nevertheless renders them quantitatively comparable? Marx called it simply 'value', or 'value in general'; but just as with weight, you cannot apprehend the value of a thing directly; you can only apprehend it in terms of the *ratio* of the value of that thing to the value of another thing. When we weigh an object in grammes we actually compare its weight with that of a cubic centimetre of water; likewise when we say how much a thing is worth, we compare its value with – say – that of an ounce of gold. In other words, the amount of value-in-general that a thing contains is always revealed as its *exchange* value, that is, the amount of *another* thing for which it would be con-

sidered equivalent in exchange. Most often, exchange values are expressed in money, for money is a special kind of commodity that has no other use than as a medium of exchange, and that can act as a general equivalent for expressing the relative values of *all* commodities.

Use-values, then, are qualitative and heterogeneous; value-in-general is quantitative and homogeneous; the use-value of a thing is given in the situational contexts of its deployment, whereas the amount of value-in-general that inheres in the thing is revealed as its (context-independent) exchange value, typically expressed in terms of money. But there is another homologous distinction to be made, and this concerns work. Tailoring, pottery and joinery are clearly activities of different kinds: they involve different raw materials, different tools and procedures, and different skills. They are, indeed, as unlike as the objects produced: coats, teapots and chairs. Yet the work of the tailor, of the potter and of the joiner, once they have become commodities, must all be expressible as varying *amounts* of the same *kind* of thing. What is this thing: the lowest common denominator of all human activities that is nevertheless manifest in none?

Marx (rather misleadingly) called it 'abstract social labour'. That labour is an abstraction, of the same order as weight and value-in-general, is not in doubt. Yet what are relegated in the abstraction are precisely those situationally specific features of the practical contexts of engagement, with persons and materials, in which skills are acquired and deployed. The work of the tailor can be considered substitutable for that of the potter or the joiner only by cutting it out from the matrix of social relations within which it takes on its specific form. That specific, socially embedded form is what I have called a task. I have already observed that tasks do not exist in isolation but only as part of an interlocking array, a taskscape. Of any component of the taskscape we can ask what it is like, but not how much of it there is. In other words, like the array of different use-values, the taskscape is qualitative and heterogeneous. Labour, by contrast, is quantitative and homogeneous. And in the reduction of the one to the other, effected by the logic of capitalist relations, the sociality of work is dissolved.

We now have two parallel distinctions: labour is to the taskscape as value-in-general is to the array of use-values (and, we might add, as land is to landscape, but that is another argument; see Ingold, 1993: 157–8). What, then, is the common measure by which different tasks may be reckoned to represent equivalent amounts of labour? The answer, of course, is *time*; but it is time of a particular sort – sidereal rather than social, to recall Sorokin and Merton's (1937) distinction. The relation between labour and time here is precisely analogous to that between

land and space. For just as labour is measured out in standard units of time (such as hours), so land is measured out in standard geodesic units of space (such as hectares). And in precisely the same way, the value inherent in commodities is measured out in standard units of currency, in money. Now a particular kind of task, say in joinery, will lead to the production of a particular kind of object or use-value, say a chair. But if the work of the joiner is regarded not as a specific kind of task but as a certain amount of labour, it will be represented in hours. And likewise, if the chair is regarded not as a specific kind of object but as a certain amount of value, it will be represented in currency. Consequently, a certain time of labour has produced a certain moneysworth of goods. Or in short, time is money.

The phrase 'time is money', with its implication that time is something that can be spent or saved, used profitably or wastefully, hoarded or squandered, is a product, then, of the commodification of labour that accompanied the rise of industrial capitalism (for some of its metaphorical ramifications, see Lakoff and Johnson, 1980: 7–9). Among the first to use the phrase was Benjamin Franklin, himself one of the major architects of the view of man as *Homo faber*, or nature-transformer. In 1751 he related the following story:

Since our Time is reduced to a Standard, and the Bullion of the Day is 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 in 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*. (cited in Thompson, 1967: 89)

Let me recapitulate the argument in brief. With industrial capitalism, labour becomes a commodity measured out in units of time, goods become commodities measured out in units of money; since labour produces goods, so much time yields so much money, and time spent in idleness is equivalent to so much money lost. The result is not only a demarcation between work (time that yields money) and leisure (time that uses it up), but also a characteristic attitude to time as something to be *husbanded*. Thompson calls this attitude 'time-thrift' (1967: 83–4).

Tasks, Labour and Leisure

Thompson's thesis is that with the rise and maturation of industrial capitalist society, the task-oriented time of pre-industrial rural and urban life was gradually replaced by a regulation of production governed by the clock. In Sorokin and Merton's (1937) terms, this represents a transition from 'social time' (equivalent to Thompson's task-oriented time) to 'sidereal time' (equivalent to Thompson's clock time).

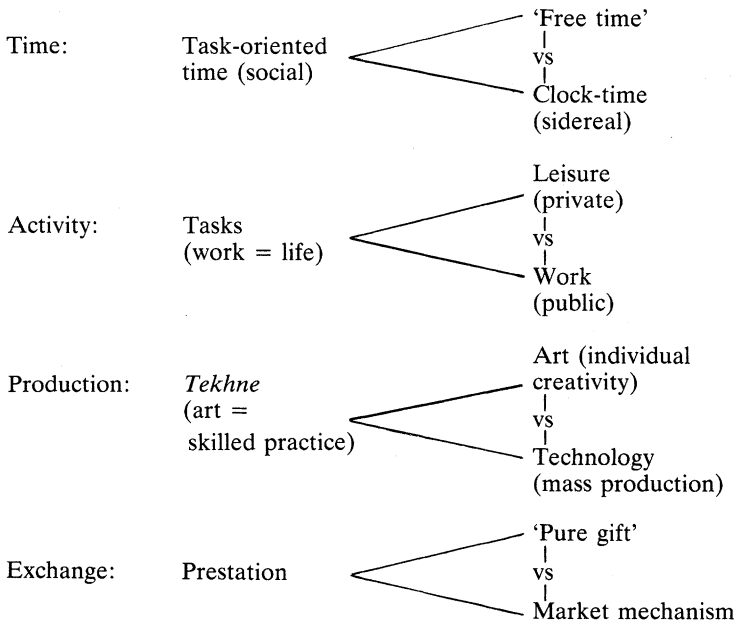
Task-orientation, as I have already mentioned, is person-centred, so that the experience of time is intrinsic to the performance of skilled activity. But with the rise of capitalist industry, so the theory goes, the person is withdrawn from the centre to the periphery of the labour process, and hence also the time inherent in personal experience and social life is *disembedded* from the time of work or production. This latter kind of time thus appears objective and impersonal, *extrinsic* to social relations, and governed by laws of mechanical functioning that have no regard for human feeling. It is, of course, the time of the *clock*. For just that reason, Lewis Mumford famously claimed that the clock was the archetypal machine, and that it was the clock rather than the steam engine that heralded the birth of the machine age (Mumford, 1967: 286). For the aim of industrial employers, having appropriated the labour-power or capacities to work of their employees (for a given number of hours each day), is to put together these capacities – on the factory floor or assembly line – into an efficient, working mechanism. And they do so by subjecting their operations to a precise and impersonal clockwork regimen. In many industries, such regimens of work were in place long before the advent of machine automation.

But the identification of the sphere of production with the ascendancy of clock time generates the expectation that the alternate sphere of consumption should be identified with a quite different kind of time, precisely opposed to clock time as individual freedom is opposed to mechanical constraint. This is what is colloquially called 'free time', and it is the time associated with what we call 'leisure' when this is defined by its *contrast* to work. Free time is the time we experience (or rather, think we experience) when we turn inwards on ourselves in the hedonistic pursuit of purely individual satisfactions: it is the time of that archetypal creature of neoclassical economics, the isolated consumer. In reality, of course, this creature is a figment of the imagination, for no one consumes in isolation. For the same reason, free time is not so much something we actually experience as a category by which our experience is discursively represented, in contexts where we wish to draw attention to the space

of our own private and subjective selfhood as against the regulative structures of public life whose temporality is epitomized by the clock.

The individual, in this discourse, is supposedly caught in a perpetual oscillation between work in the public domain of production and leisure in the private domain of consumption. Regulated by clock time in the former, he or she retreats into the sanctuary of free time in the latter. In a society dominated by the impersonal structures of the machine and the market, the sphere of leisure seems to offer a residual space for the spontaneous and purely individual expression of selfhood. Moreover the oppositions between work and leisure, and between clock time and free time, have exact homologues in other fields. There is a close connection, for example, between the ideally spontaneous expression of selfhood and the modern Western notion of artistic creativity, which is likewise opposed to the industrial technology of mass production as novelty is opposed to replication. And in the field of exchange, the privacy and spontaneity of the self is closely linked to the ideology of the 'pure gift', as an expression of individual feeling, by contrast to the impersonal

FIGURE 1
Comparison between the Dwelling Perspective (Left-hand Column) and Commodity Perspective (Right-hand Column)



'market mechanism' regulating the exchange of commodities. Thus gifts are to commodities as art is to technology, as leisure is to work, as free time is to clock time. This series of oppositions is depicted in the right-hand column of Figure 1.

What, then, has been the fate of task-oriented time in industrial society? Has it given way to an exhaustive division between free time and clock time? Before beginning to answer this question, we should note that the task-orientation of traditional societies also has its homologues in other fields. Thus in the field of production, the traditional notion of art as socially situated skilled practice, epitomized by the classical Greek *tekhne*, preceded the subsequent bifurcation into the opposed notions of art and technology, just as the classification of activities by task preceded the division between leisure and work. And the prestations of traditional societies, about which Mauss wrote so eloquently in his *Essay on the Gift* (1990/1950), are neither spontaneous expressions of individual generosity nor market-regulated contracts but have as their objective the production of social relations in community. It is possible, therefore, to argue for an evolutionary progression, from a traditional state of affairs in which work is inseparable from life, and characterized by task-orientation with its attendant socially situated skills and prestations, to a modern condition in which every aspect of human life is split by a master dichotomy between freedom and necessity, to yield the series of oppositions spelled out above. Figure 1 summarizes this argument.

I propose here to argue to the contrary. I do not believe that task-orientation has disappeared with the transition to industry: it persists, perhaps especially in those contexts in which we claim to be 'at home'. Indeed, one way of delineating the meaning of 'home' in our society might be as a domain in which activities are thought of primarily in terms of tasks. But the very ambiguity of this concept suggests two possible approaches to the continuing significance of task-orientation in industrial society. On the one hand, home may be thought of as a domain of activity that has remained relatively impervious to capitalist relations of production – a relic of the householding economy of the pre-industrial era kept alive by capitalism for the purposes of reproducing the labour force. On the other hand, home may represent a perspective on the world, one that I have elsewhere called the perspective of *dwelling* (Ingold, 1993). Its focus is on the process whereby features of the environment take on specific local meanings through their incorporation into the pattern of everyday activity of its inhabitants. Home, in this sense, is that zone of familiarity which people know intimately, and in which they, too, are intimately known. As such, it encompasses all the

settings of everyday life: whether the house, street, neighbourhood or place of work.

Of the two approaches suggested by these alternative meanings of 'home', one entails a qualification of the evolutionary argument, the other a more radical critique. I shall start with the first and then move on to the second, with which I identify my own position.

Time and Experience in the Household and the Workplace

The domain of householding, although by no means confined within the four walls of the house or dwelling, was until quite recently (though less so today) centred upon the figure of the 'housewife', who certainly used to enjoy no division between work and leisure. For her, work was indeed life, and consisted in a multitude of tasks of child-rearing and domestic maintenance. Moreover, unlike the industrial worker, the housewife remained formally in command of her own working capacity: although her work was necessary and unavoidable, often punishing in its demands of energy and endurance, it was *not* done under external imposition. Thus the housewife and her sense of time, as Thompson recognizes, hold out as exceptions to his general thesis, which correlates the rise of industrial capitalism with a one-way transition from task-oriented to clock time:

Despite schooltimes 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. (1967: 79)

Here, then, is the qualification: notwithstanding industrialization, task-orientation continues to thrive in the domestic domain, as a kind of survival from the pre-industrial age, albeit one that is destined to disappear in due course.

If this qualification is accepted, then so long as the household continues to be a focus for social reproduction, we need to consider the dialectical interplay *between* the task-oriented time of the home and the clock time of activities in the workplace. There are two points about this that we can note immediately. First, the distinction falls – or at least used to fall – to some extent along lines of gender and generation, with women and children more committed to task-oriented time and men more committed to clock time. In the past, an obvious indication of this was that men, and not women and children, carried clocks or watches.

If a woman or child wanted to know what the time was by the clock, they had to ask a man. Second, there can be scheduling conflicts between the two kinds of time which can cause quite severe disruptions within the household. The routine of domestic and community tasks has to fall in with local environmental conditions, whereas industries and bureaucracies run to a universal clock time which can co-ordinate production, transport and commerce on a national or even international scale, but only at the expense of riding roughshod over local variations. Below, I shall present an example of the problems that can arise in this connection, concerning the family life of locomotive drivers.

Is the incongruence between task-oriented and clock time, as the qualified evolutionary argument outlined above suggests, confined to the household – or, more broadly, to the local community? Has task-orientation been banished by the inexorable logic of the capitalist mode of production from the workplace? Is it really so, as theory dictates, that workers lose touch with the rhythms of their own bodies as soon as their physical powers, placed in the service of capital, are subordinated to the imposed, mechanical regimen of the production line? In his discussion of the alienation of labour under capitalism, included in the *Economic and Philosophic Manuscripts of 1844*, Marx protested with all the rhetorical force he could muster that this is indeed the case. Having surrendered his capacity to work to an employer, the worker ‘only feels himself outside his work, and in his work feels outside himself. He is at home when he is not working, and when he is working he is not at home’ (1964: 110). Now by ‘home’, Marx clearly meant something more than a person’s place of abode. Setting off to work in the morning, people not only leave their dwellings but also, in a much stronger sense, *cease to dwell*. Workers are not themselves: as their activity no longer belongs to them, so too they are strangers to the world whose forms and meanings are created through this activity.

Viewed from the perspective of the factory owner, workers may indeed appear as no more than extensions of the total apparatus of production, and their activity as the mere operation of a set of mechanical principles – that is, a technology – embodied in the construction of the machinery employed (Ingold, 1988). This was the image that Marx invoked when he spoke of operatives as being treated like ‘living appendages’ of the ‘lifeless mechanism’ of the factory (Marx, 1930: 451). The experience of the workers themselves, however, is a different one. For in their concrete presence, machines are substantial components of the immediate environment, and engaging with them is an inevitable part of the business of everyday coping in the world. Thus, rather than simply operating a technology, the activity of industrial workers consists in

coping with machines. And viewed in this light, such activity not only belongs to them, but also calls for a good measure of skill, of a kind that can only be acquired through experience on the job. Moreover it is through the development of skills of coping that workers are able to resist the impositions of a regime of command and control that would seek to reduce their activity to nothing more than the operation of an external system of productive forces. It is true that the machinery that workers are required to operate may – on account of its noise, heat, vibration or whatever – strain the human body to the limits of its tolerance. However, despite Marx's claim to the contrary, workers do not cease to dwell in the workplace. They are 'at home' there. But home is often a profoundly uncomfortable place to be.

I have already observed that machines do not perform tasks; only people do. The operation of technology, with or without inputs of human labour-power, is a machine performance. Coping with machines, on the other hand, entails a multitude of tasks, calling for specific aptitudes and sensibilities, which occupy the attention of workers on the shop floor. It is as persons, not as units of labour-power, that they engage with the industrial equipment around them, and the meanings that this equipment holds for them arise within the context of that engagement. Here, then, we rediscover task-orientation at the very heart of industrial production, in the workplace. For this discovery, I am indebted to François Sigaut, who has pointed out that as fast as machines have been contrived to do what had previously been done by skilled hands, different skills have sprung up for handling the machines themselves. He calls this the 'law of the irreducibility of skills', in the light of which 'the entire history of technics . . . might be interpreted as a constantly renewed attempt to build skills into machines by means of algorithms, an attempt constantly foiled because other skills always tend to develop around the new machines' (Sigaut, 1994: 446). For precisely the same reason, task-orientation is indestructible. And everything I have said about tasks in general applies more specifically to the skilled handling of industrial machines in the process of coping. It is person-centred, it follows implicit 'rules of thumb' rather than explicitly codified procedures, its objectives are set within the current of activity among all those involved in the work situation rather than following directives laid down from above, it is continually responsive to the other activities that are going on around it, and – most importantly – it is constitutive of personal and social identity.

In short, whereas the operation of technology produces commodities for the owner of capital, coping with machines is part of the process of producing the worker as a skilled social agent. The same activity may be viewed from both perspectives, but it is the latter, grounded in the lived

experience of engagement with the material paraphernalia of industry, that is the perspective of dwelling. And in the incongruence between these perspectives, of dwelling and commodity production, lies also the tension between the time of tasks and of the clock. We are inclined to speak of workers on an assembly line as being subjected to the regimen of clock time, while forgetting that the mechanism of the clock drives only the hands on its face, not the hands of the workers whose routine it allegedly controls. The ability to co-ordinate one's movements with the passage of time as measured by the clock is an acquired skill, and the co-ordination is itself a task that is carried on alongside all the other tasks of social life. Clocks are a ubiquitous feature of the environment of people in industrial society, who have to learn to cope with them, just as they must cope with other kinds of machines. But the time intrinsic to the experience of coping with clocks is not itself clock time. We may seek to attune our activity so that it resonates with the repetitions of the clock, or to gain an intuitive 'feel' for hours, minutes and seconds, but that does not turn our bodies into pieces of clockwork.

Having recognized that task-orientation is no mere survival from the pre-industrial age, but that it flourishes at the core of industrial production in workers' activities of coping with machines, the way is open for an analysis of industrial society couched in terms of the concepts listed in the left-hand column of Figure 1. In particular, we can note that exchanges in the workplace involving mutual assistance or co-operation in the tasks of coping, are conducted between persons, and that as such – like the customary prestations of traditional societies – they are constitutive of social relations instead of distinct from them. One might even argue, following the lead of Mauss rather than Marx, that the relations among factory workers resemble those of gift exchange:

When such employees transact with one another as part of their work, they are morally obligated to do so and are transacting not as individuals but as parts of a social web that identifies them and their relationships and obligations to one another. Furthermore, the objects and services that employees transact with one another remain linked with the employees, because workers and what they transact have identities based on their places within the encompassing firm. (Carrier, 1992: 202–3)

The implication of my argument, however, is that the dynamic of industrial society can be understood neither from the dwelling perspective represented by the left-hand column of Figure 1, nor from the commodity perspective represented by the right-hand column. It lies instead in the dialectical relation between these two perspectives.

In terms of the geometry of the figure, people in industrial society are

caught in a 'horizontal' oscillation, not in a 'vertical' one, but it is an oscillation that incorporates the whole series of dichotomies in the right-hand column as one of its poles. From one perspective there is free time and clock time, from the other all time is task-oriented. From one perspective there is work and leisure, from the other all life consists of tasks. From one there is creative art and the operation of technology, from the other, skilled practices. And from one there are pure gifts and market contracts, from the other, socially situated prestations. But the move from left to right does not represent an evolutionary transition from tradition to modernity. The dwelling perspective has not been *replaced* by the commodity perspective. Indeed the whole thrust of my argument is to the contrary – namely that task orientation, with its attendant socially situated skills and prestations, is the primary condition of our being at home in the world. As such, it constitutes the baseline of sociality upon which the order of modernity has been built, and from which we have now to come to terms with it.

The Life and Times of Locomotive Drivers

I should like to exemplify some of the points made above by referring briefly to studies of one particular category of industrial workers – namely, locomotive drivers. They were the subject of a classic paper by the American sociologist W. F. Cottrell, published in 1939 under the title 'Of Time and the Railroader'. Cottrell paints a vivid picture of how the railroader is a slave to time. The railway system is, in effect, an extension of the assembly line of the factory; for example, in automobile manufacture the various components may have to be brought from widely dispersed parts of the country, and if any one of these supply lines breaks down the entire operation founders. The stakes, then, are high, and everything depends on precise timing. Though at the time when Cottrell was writing, United States law stipulated that every engineer should have 8 hours' rest out of every 24, for the remaining 16 hours of each day these engineers were constantly on call. Wherever they went they carried a watch, which was required to be checked for accuracy twice a year. The result, Cottrell writes, was an 'intense time-consciousness that marks the railroader in all his social relationships' (1939: 195).

But this very commitment made it difficult for the railroader to engage in *any* social relationships beyond those of the immediate family. Being constantly on call, he could not time-plan for other relationships. Frederick Gamst, in a more recent study of American railroad engineers ('hogheads') that confirms many of Cottrell's findings, vividly depicts the

uncertainties of one of his informants, Slim Rogers, about participation even in family events. Would he be able to watch his son in a crucial baseball game?

As usual, the hoghead promised nothing but said he would have to see how close he would be to his call, if he were not already on the road. . . . Regrettably he had already missed his oldest son's graduation from junior high; maybe he would be able to make it for the graduation of the younger one. The only thing Slim could depend on was attending his own funeral, as he was once told by an old hoghead at the top of the seniority list. 'Then you'll have all the time in the world, Sonny,' the old head remarked. (Gamst, 1980: 113)

By and large, then, the railroader's leisure activities were limited to solitary, individual recreations that called for no collaboration with others. But precisely because the field of his social relations was perforce so limited, the significance of close family ties was for him exceptionally great, so that his home life – when he *was* at home – was lived with a peculiar intensity.

Relations with the local community, partially mediated by the children of the family, were conducted almost entirely by the railroader's wife. For her, the family represented not a domain of retreat into privacy and solitude, but a point of entry into a wider network of community ties. But she would frequently experience scheduling conflicts between the demands of the children and of community affairs on the one hand, and her obligations towards her husband on the other. They might, for example, call for quite different mealtimes.

It would seem, in this example, that the railroader is oscillating between work and leisure, between the public clock time which regulates the railway system and the free time experienced in the privacy of his home or in the solitude of individual recreation. The housewife, on the other hand, perceives time as task-oriented and founded in the social relations of household and community. And the demands of the community do not necessarily coincide with those of the clock. All of this conforms rather neatly with the qualified evolutionary model, as elaborated in the previous section. The reality, however, may not be that simple. Two more recent studies of railway workers offer some clues as to why this should be so.

The first is by L. S. Kemnitzer, who speaks from his own experience as a railroad conductor in the mid-1960s, some 35 years after Cottrell was writing. He found that, by then, railroad workers no longer identified so closely with the temporal values of the work. That is, the importance of time-keeping for the operation of the railroad system was not matched by an 'intense time-consciousness' of the kind Cottrell had described.

The reason for this lay in a general loss of identification with the job, resulting from rationalization and automation – including the use of diesel engines, computer programming and radio communication. Thus while the accuracy of timing continued to be as important as ever, most personnel were no longer required to carry watches, and these were less regularly checked. However, Kemnitzer goes on to emphasize the continuing importance of quite another sense of time, one tied closely to specific tasks and the embodied skills necessary to carry them out. This, so-called ‘switching time’ lies in the ‘ability to integrate time, distance, and subjective estimates about weight, slope and speed in making decisions about the movement of cars and engines in switching’ (Kemnitzer, 1977: 27). Birgitta Edelman’s (1993) study of shunters in a Swedish railway yard similarly stresses the importance of skilful estimations and perfect timing in allowing the work to ‘flow’ without accident. But here, rationalization had proceeded still further. According to a new and controversial regime, the engines themselves were to be operated by remote control by a shunter standing beside the tracks!

Now the kind of timing to which Kemnitzer and Edelman refer is clearly integral to the railway workers’ acquired skill of coping with heavy and potentially dangerous vehicles. Indeed ‘switching time’ sounds surprisingly similar to the Ancient Greek concept of *kairos*, the moment that must be seized, in the skilled work of the artisan, when ‘human action meets a natural process developing according to its own rhythm’ (Vernant, 1983: 291). According to Vernant:

In intervening with his tools, the artisan must recognize and wait for the moment when the time is ripe and be able to adapt himself entirely to circumstances. He must never desert his post . . . for if he does the *kairos* might pass and the work be spoiled. (1983: 291–2)

Thus switching time, like the *kairos*, belongs to a task-orientation – we could almost say that it is part of the *tekhne* of shunting. And as Edelman’s study reveals, it is threatened by the relentless march of automation. Yet according to Kemnitzer, the process of automation had already brought about the demise of the ‘intense time-consciousness’ described by Cottrell. Was not this time-consciousness, too, part of a task-orientation, part of the railroader’s ability to cope with the demands of his work?

I believe we misunderstand the railroaders’ sense of time if we equate it with the subjection of their movements, while on the job, to the mechanical determination of the clock. Were they so determined, the railroader would have no need to carry a watch. What distinguished experienced railroaders was their practised ability to co-ordinate their

movements with the indications of their timepiece. They had to be able to catch the right moment to accelerate or apply the brakes, or to judge their speed on a stretch of track, so as to arrive or depart safely and precisely on schedule. This was an acquired skill, and one moreover that was highly valued. The railroaders' peculiar capacity to 'keep time' with a precision unmatched by practitioners of other trades conferred on them an identity that, as Cottrell notes, singled them out in all their relationships, both within and beyond the field of their employment. And the watch, as the symbol of this identity, was an object of lavish care and attention (Cottrell, 1939: 190). In the eyes of management, to be sure, the railroad system was conceived as a total technology which, in principle, should run with the predictability of clockwork, and employees were treated merely as means towards that end. But in the experience of the railroader, the watch and its temporal intervals were incorporated and accorded significance within an essentially task-oriented approach to the practical business of driving trains. Time-consciousness belonged to the railroader's *tekhne*.

Time and the Other in Industrial Society

There exists, in the Western anthropological imagination, a specific category which is reserved for people whose form of life is considered to be most perfectly opposed to that of the inhabitants of modern industrial societies. This is the category of 'hunter-gatherers'. According to one rather Arcadian vision of hunter-gatherer society, recently introduced into anthropology under the rubric of 'the original affluent society' (Sahlins, 1972: 1–39), their wants are few, and can be satisfied with little work, leaving ample time for leisure, rest and sleep. People work erratically, and on average for no more than 3 or 4 hours each day. Lacking foresight or any care for the future, hunters and gatherers consume whatever they have to hand, without trying to ration, save or store. They have, it would appear, made an institution out of indolence.

Now Sahlins's account of hunters and gatherers echoes, almost word for word, the sentiments of the English gentry, in the early days of capitalism, towards the labouring classes – likewise notorious for their alleged indolence and profligacy, their irregular hours, and their propensity to spend whatever they had on instant merriment, gambling or drunkenness. What these two cases have in common – the twentieth-century American anthropologist regarding the hunter-gatherer and the eighteenth-century English gentleman regarding the labourer – is that in both a way of life is being evaluated in terms of a standard that measures

work in hours, and that imposes a clear-cut division between work and leisure. On these criteria it is found to be wanting. Indeed to people who are accustomed, as many of us are, to labour timed by the clock, the attitudes to work and time of allegedly traditional or 'primitive' folk, who are not, are almost bound to appear 'wasteful and lacking in urgency' (Thompson, 1967: 60).

Yet contemporary captains of industry are still inclined to make surprisingly similar allegations about the incorrigible laziness and inefficiency of working people. To give just one illustration, I return to the ethnography of railway workers, in this case from Britain. I refer to Ken Starkey's (1988) analysis of an industrial dispute between British Rail and ASLEF (the Association of Locomotive Engineers and Firemen). The dispute, which concerned flexible rostering, was not about the duration of the working day – for in this regard there was no further scope for reduction – but about the *intensity* of work whilst on the job. The problem was that the union was committed, by a time-honoured agreement, to the idea of a fixed 8-hour day. British Rail, however, wanted to introduce some flexibility in the length of the working day so that a person might be working more than 8 hours on some days, less than 8 on others – though with no more and probably fewer hours overall. The rationale for the proposed change was to try to reduce the 'porosity' of the working day, that is, the length of time during which an employee might not, in fact, be doing anything but waiting around for the next train. Thus under existing arrangements, the average actual working time for an 8-hour shift was only 3 hours 20 minutes. Flexible rostering would increase the proportion of working time to waiting time within a shift, and by thus reducing the porosity of the working day would raise productivity. Why, then, did ASLEF object?

Quite apart from the fact that it would increase the intensity of work, ASLEF's main objection was that flexible rostering would leave its members with much less control than before over the *scheduling* of their personal and social lives. Like the drivers described by Cottrell, who worked to a 16-hour limit but were liable to be called up at any time, ASLEF feared that flexible rostering would undermine railway workers' ability to time-plan their own relationships outside work, and so would make their social life intolerable. At issue, then, was not the *amount* of time outside work, but control over the *timing* of this time.

In effect, the dispute focused on two ways of looking at time which are by now familiar from my previous discussion. These are the dwelling and commodity perspectives. In the commodity perspective, epitomized by the phrase 'time is money' and represented by the right-hand column of Figure 1, time is seen as a quantity to be budgeted, with a clear-

cut demarcation between work and leisure. Not only did British Rail management hold to this view themselves, they also attributed it to their union opponents, assuming that their strategy was devised to produce a deal which would give them either more leisure for the same pay, or more pay for the same number of hours of work. For ASLEF, to the contrary, what mattered was the qualitative aspect of time and its significance for social life. Thus ASLEF's objections to the intensification of time use rested more on moral than on economic criteria. On the one hand, they perceived the attempt to increase the intensity of time use during the working day as a threat to the traditional conception of locomotive driving as a skilled, almost craft-like activity which, by its very nature, involves a quality of time that is not uniform or homogeneous. On the other hand, they saw the attempt to introduce flexible rostering as a threat to their own social and community lives. In short, theirs was an approach firmly located in the dwelling perspective, represented by the left-hand column of Figure 1.

It would perhaps be a little far-fetched to conclude that ASLEF demonstrated a typically hunter-gatherer approach to work and time. Nevertheless, there is more than a passing similarity between Sahlins's portrayal of the intermittent, stop-go pattern of work in hunter-gatherer communities, and British Rail's view of its drivers, as spending the greater part of the working day waiting (chatting, resting, playing cards, drinking cups of tea) between trains. In terms of the actual number of hours worked – if any meaning can be given to such measurements – there is not much difference. It would seem, then, that the opposition between the 'West' and the 'Other' has its source rather closer to home than we might have imagined, and that we do not even have to leave the bounds of our own society in order to discover the challenge presented by supposedly non-Western perspectives to the dominant categories of Western thought. It would be fair to identify these latter categories – including the dichotomies between freedom and necessity, leisure and work, art and technology, the pure gift and the market mechanism, and free time and clock time – with the commodity perspective. However it would be quite wrong, as I have already shown, to conclude that life in modern industrial societies is confined to an oscillation between the poles of these dichotomies – that is, to the right-hand column of Figure 1.

An indication of this lies in our response to Evans-Pritchard's depiction of Nuer time, which I cited at the outset. When he tells us that for the Nuer, time inheres in the round of daily tasks and their relations to one another, we do not find this strange or exotic. To the contrary, I am sure his words strike in most readers a deep chord of familiarity. We know exactly what he is talking about, because we have all experienced it

ourselves, embedded in our memories of childhood, family, home and community. It is not only the basis of our sense of belonging, but also something we value very highly. 'Nuer are fortunate', says Evans-Pritchard, and we are quick to agree, wishing that we, too, were not harried by the regimen of the clock. In a sense, clock time is as alien to us as it is to the Nuer; the only difference is that we have to contend with it. If we differ from the Nuer, then, it is not because they have a task-orientation and we do not. The difference is rather that we are forced to accommodate this orientation – so fundamental to our personal and social identity, to our knowledge of place and people, and to the practice of our everyday skills – within the straitjacket of a 'Western' or commodity-based institutional and ideological framework that seeks at every turn to deny the reality of situated social experience. We are not Westerners, nor are we really non-Westerners; rather, we are human beings whose lives are caught up in the painful process of negotiation between these extremes, between the dwelling and commodity perspectives. In this process lies the temporal dynamic of industrial society, a dynamic which we – including anthropologists, in their writings – have merely displaced onto the relation between our society and the rest of the world.

Note

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