CHAPTER 2

The Origin of Clock-time, and the Origin of Capitalism

The contested imposition of conceptions and practices of time by religious authorities, ruling groups, state officials, scientific elites, or more broadly by dominant classes, figures prominently in the literature on social time, although it is often described in less conflictual terms, as ‘rationalisation’ of time, or ‘organisation’ of time.¹ One of the most widely spread of such time-forms, the calendar, dates back to ancient societies; however, the main focus here is on a relatively new phenomenon, the mechanical clock and clock-time (originating in the thirteenth and fourteenth centuries).

The following pages retrace clock-time’s historical journey from a time-form embedded in specific pre-capitalist social time relations, to its slow but unmistakable development into a social time infrastructure in a period of transition to market mediated social-property relations, up until just prior to the Industrial Revolution. The enquiry focuses on the historical origin of mechanical clocks and their relative spread, especially in urban settings. It then moves on to an account of the transition from feudalism to capitalism, and of a historical moment when clock-time’s temporal infrastructure is slowly being built in some parts of Western Europe – the focus is on England – while agrarian capitalist social relations are developing in the English countryside. This context underpins Isaac Newton’s formulation of a historical milestone in the history of ideas: his important and influential concept of ‘absolute time’, which is read in context. The main proposition here is that clock-time, although increasingly present in pre-capitalist social time relations and slowly deployed as a socio-temporal infrastructure in certain social microcosms, does not reach a hegemonic position in pre-capitalist European social time relations.

¹ The Innovation of the Clock: Clock-time, Wage-labour and Commerce in Context

The innovation of the mechanical clock and its corresponding form of time, ‘clock-time’, is a momentous development in the history of social time. Many

¹ See, for example, Zerubavel 1981, among others.
treat the invention and spread of mechanical clocks in the late medieval period as a powerful modernising force, or even as the very ‘symbol of the process of European modernization’. Importantly, however, while clocks are a paramount symbol of modernity, their origins are distinctively pre-modern. Moreover, the advent of abstract clock-time was far from driven by purely technical ‘discoveries’, and did not represent a once-and-for-all shift from the concrete time-units, temporalities, timing practices, time patterns and time sequences of human practices to abstract ones, quantified and measured by abstract time-units. The ‘revolution of the clock’ of the fourteenth century was perhaps not as ‘revolutionary’ as it appears at first glance. It is only later, after the consolidation of capitalist social relations, that the process of universalisation of clock-time truly unfolds, that clock-time embarks on its path to social hegemony. The focus for now is on the first act of this historical process, the introduction and diffusion of clocks and clock-time in Late Medieval and Renaissance Europe.

1) On the face of it, the invention of the clock might seem like a development to be treated as part of the history of techniques and technology, which in turn would have had monumental effects on social development. In short, clocks are invented, and then societies change their relationship to time as a result of this. If one were to adopt such a perspective, ‘modern’ time would be viewed as a product of the invention of the clock, leading to the replacement of ‘imprecise’ medieval time-reckoning systems with progressively more ‘precise’ clock-time, a development fuelled by the further refinement of clock mechanisms. From such a perspective, the history of technique and technology underpins social history. The development of clocks would in itself be treated as the main causal factor explaining the advent of ‘modern time’, and thus a crucial explanatory variable in accounts of the advent of ‘modernity’ itself.

However, treating the invention of clocks as an endogenous technological development amounts to isolating the development of technology from its social context. Such treatment moves back to a mechanistic explanatory strategy for social development, and as such is subject to the pitfalls of technological determinism. Many writers have warned against this form of causal narrative. In the case of mechanical clocks and clock-time, historian Jacques Le Goff pursues an insight developed by Marc Bloch, and reminds us that ‘l’histoire des techniques est impuissante à expliquer à elle seule le passage du

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2 Dohrn-van Rossum 1996, p. 3.
3 For a critique of technological determinism see E. Wood 1995, pp. 108–45.