Metascience
DOI 10.1007/s11016-010-9340-4

BOOK REVIEW

What clocks tell us

Paul Glennie and Nigel Thrift: Shaping the Day: a history of timekeeping in England and Wales 1300–1800, Oxford University Press, Oxford, 2009, xiv + 456 pp, US$70.00 HB

Stephen Gaukroger

© Springer Science+Business Media B.V. 2010

Shaping the Day offers a detailed account of timekeeping in medieval and early-modern Britain, but it takes as its focus a conceptual issue in the historiography of timekeeping, namely the ‘naturalness’ of the modern understanding of the passage of time and its measurement.

The traditional assumption has been that clock time is a natural understanding of time, and universal in its standing. What is at issue is whether clocks, despite the fact that as we now understand them they are comparatively recent, capture and measure something that any culture would recognize. The most clearly problematic assumption here is that of the naturalness of the division of the day into equal periods. The division of the day into units occurred very early, in Babylonian times, but the prevalent form of such division from remote antiquity to the early-modern period was into an equal number of daylight and nocturnal periods, ‘hours’. The length of the hour depended on whether one was measuring them in summer or winter. The equal division of 12 h of the day measured on a sun dial, for example, are clearly longer (by clock time) than the hours measured in winter on the dial. Similarly with the division into twelve nocturnal hours as measured by a nocturnal, which traced the apparent rotation of the specific stars or constellations around the pole star. Away from the equator, it was only on the 2 days of the year when daylight and night were equal that the hours were of equal length by clock time. There was also a second understanding of hours, by which they were of equal length in summer and winter. These units of 1/360th of the 24-h day-night period (periods of 4 min) were used by astronomers to give precise times for eclipse events, for example, but they were a form of measurement devised for a specialized purpose, and there was no question of them being used for general time-keeping. A different kind of problem with the ‘naturalness’ argument concerns the late arrival of household and pocket watches, which quickly came to dominate timekeeping from

S. Gaukroger (✉)
Department of Philosophy, Main Quad (A14), University of Sydney, Sydney, NSW 2006, Australia
e-mail: stephen.gaukroger@sydney.edu.au

Published online: 09 March 2010

their appearance around the end of the seventeenth century. In particular the public clocks showed great variation in when the hours should begin, the most popular being a 24-h numbering starting from sunrise. The diversity was immense. Finally, there is the unnaturalness of clock faces with minute hands, which were gradually added to the single hour hands that had characterized clocks. Clock faces have retained the markings of single hour hand clocks, so that the numbers on the dial do not correspond to the minutes that one reads off by the minute hand: 10 min past 4 corresponds to numbers 4 and 2 on the dial, not to numbers 4 and 10. To the extent to which one is concerned about 'natural' time measurement, there is not only something manifestly 'unnatural' about this, but it requires a significant degree of (learned) numeracy in those reading the time.

One alternative to the 'natural' reading is that time measurement is wholly conventional, and in the context of British timekeeping this is an argument associated in particular with E. P. Thompson. On Thompson's account, clock time is a social custom, associated with the emergence of industrialization, which is an integral part of the new forms of social discipline that accompanied industrialization, and which indeed prepared the way for them.

Glennie and Thrift make no attempt to rescue the 'natural' notion of time, but nor are they convinced that clock time can be merely a matter of social convention. Starting with the problem of how Galileo could establish the isochrony of the pendulum—before the use of such isochrony as the basis for the construction of pendulum clocks had allowed sufficiently accurate means of temporal measurement to establish isochrony in the first place—they weave not just through the complex, boot-strapping history of the progressive construction of timepieces in Britain, but also through the history of the understanding of just what is being measured by such timepieces. The cultural implications for the emergence of modernity are drawn in the context of a detailed history, one which is distinctive in exploring non-institutional uses of clock time, rather than guiding that history from the outset, as it did in Norbert Elias' pioneering work on the cultural shaping of time for example. The history provided is one in which various different kinds of markers gain central significance—the use of clocks to measure work processes, the emergence of 'telling the time' as a normal procedure, the radical increase in public clocks, the rise of diary-keeping, the use of seconds in specialized communities, allowance for local times in transport and communications. This adds considerably to the value of the analysis offered, for the narrative emerges out of the history rather than the history merely illustrating something given in advance, whether natural or social.