Ticking off

Telling Time: Clocks, Diaries, and English Diurnal Form, 1660–1785

by Stuart Sherman

University of Chicago Press: 1997. Pp. 323.

\$60, £47.95 (hbk); \$19.95, £15.95 (pbk)

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For the benefit of the unwary who might find themselves seduced by the intriguing title, it should be pointed out that Stuart Sherman's book is essentially a work of literary criticism. The purpose of this warning is twofold: to save horologists, eager for another box-office hit like Dava Sobel's *Longitude*, from the spectre of false hope; and to alert those who might not be *au fait* with or sympathetic to current, post-Foucaultian theories of how literary texts ought to be read that they may find much of the rhetoric of this book impenetrable. For those willing to make the effort, however, there is one final warning — the central thesis of the book seems to be somewhat flawed.

Sherman argues that developments in clock and watch manufacture and decoration in England between 1660 and 1785 affected literary form during the period. At its simplest, it is a claim that has been made before and, in many ways, it is probably more-or-less true. Problems arise from the fact that the prompt for Sherman's particular point of view is a violent reaction to Frank Kermode's elegant formulation in *The Sense of Ending: Studies in the Theory of Fiction* (Oxford University Press, 1966). Kermode uses the analogy of the 'tick-tock' of a clock to illuminate the structure of a narrative where the anticipatory 'tick' of an unresolved situation is successfully brought to closure by the succeeding 'tock'.

To counter Kermode's poetry, Sherman calls three witnesses: the *Oxford English Dictionary*, John Aubrey's *Brief Lives* (1680) and the pendulum clock invented by Christiaan Huygens in 1656–57. From the first we learn that 'tick' is a word that has been known in England since 1440, whereas 'tock' was unrecorded until its appearance in 1848 in William Makepeace Thackeray's *Vanity Fair*. From the second, we note that a seventeenth-century watch is described as making a "tick-tick-tick" noise. And the third is cited as the "single, decisive" moment in the history of timekeeping, when the introduction of the pendulum as a constant driving force introduced synchronicity. "Huygensian time" was a new time because of "its capacity to track and report newly small durations — minutes and seconds — in regular, perceptible, continuous succession".

For Sherman, this "Huygensian time" is not "tick-tock time", which he claims did not exist until the nineteenth century. It is "tick-tick-tick time" which encapsulates "a *temporality* [his italics], a way of reckoning time

that includes but goes beyond counting, a way of conceiving it and experiencing it". Time for the English living during the second half of the seventeenth and first half of the eighteenth century was palpably different — even, constant, unending, unresolved. Pepys's *Diary*, the development of the daily newspaper and Daniel Defoe's travel writings all partake of this new "tick-tick-tick Huygensian time".

Sherman presents an interesting thesis, but it rests on one fundamentally erroneous assumption about clock mechanisms and their sounds. The "tick-tock" of a clock is caused by contact between the two pallets and the escape wheel. As the construction of these two pallets is never identical, the striking sound they make will always be different. And regardless of the driving force — whether by weight or spring — the "tick-tock" noise made by the alternating contact of the pallets has remained a constant feature of most public and domestic mechanical clocks and watches from the late thirteenth century to the present day. To my knowledge, there is only one type of escapement that could be claimed to make a "tick-tick" noise and that is the single-beat escapement first used around 1750 (although, in all honesty, the clocks with a detent escapement tend to make more of a "tock-pause, tock-pause" sound).

Furthermore, it seems somewhat ironic that many of the more sophisticated precision timekeepers of the seventeenth and eighteenth centuries — those whose supposed post-Huygensian "tick-tick" constancy should serve best to support Sherman's thesis — tend to reflect the complex structure of their movements in the sound they make. John Arnold's version of the single-beat escapement, for example, when closely analysed is, in fact, a delightful three-beat drum roll followed by a tiny click. And John Harrison's H-1 timekeeper veritably babbles with a "kerchunkety-kerchunkety-twang" — the twang being the expansion and contraction of the springs linking the interconnected balances.

One exaggerates to make a point, but it does seem somewhat precipitous for a scholar whose work is characterized by an extremely close reading of a given text to be so bold as to use analogies from other disciplines about which he is not sufficiently informed. His presentation of the history of chronometry and its relation to prose form simply does not stand up to scrutiny because his understanding of how clocks work and how timekeeping conventions changed during the seventeenth and eighteenth centuries is exceedingly patchy. The descriptions of the lunar-distance method of navigation are riddled with small inaccuracies and misunderstandings. And the account lacks an appreciation of some of the problems involved in time-reckoning between John Flamsteed's formulation of the equa-

tion of time and the introduction of standard time in Britain in 1850.

Literary critics may be convinced by Sherman's arguments, but from the perspective of a historian of science there is more than a little worry generated by claims such as "Pepys' ignorance is the crucial datum" because "...at Greenwich, Huygensian temporality will achieve hegemony, but not yet and not inevitably". One can only envy Pepys's ability to be so lucky in his ignorance. □

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Number crunching

Mathematics from the Birth of Numbers

by Jan Gullberg

Norton: 1997. Pp. 1093. \$50, £35

Peter Saunders

Most mathematicians find it very difficult to explain to other people what mathematics is and why we find it so absorbing. Even our students generally take some time to see the picture. They spend three or four years studying different parts of it in detail. While this is going on, we point out some of the connections and common features; others they become aware of by themselves. If all goes well, by the end of the course they have not only learned about the parts they have studied, they have also learned about mathematics as a whole.

Much of the skill in designing a good mathematics course consists of choosing and arranging the material in a way that will encourage this to happen, and much of the reason that many mathematicians are not especially enthusiastic about modular degrees is that they can seriously impede the process.

But what about people who do not have so much time to study the subject? How can they see how the different pieces are intertwined if they have not learned about them separately? How can they appreciate the way a theme recurs if they meet it only once? In short, how can they comprehend the unity of mathematics if they do not know enough about the subject? Yet it is the unity that is the real essence of mathematics, which makes it so much more than a collection of puzzles somehow combined with a set of clever methods for solving scientific problems.

Fortunately, one does not have to take a degree in mathematics to get a reasonably good idea of what the subject is about. One can manage with far less, but the material must be very carefully chosen to illustrate the key areas and to allow the connections to be made. That is easy to say, but difficult to put into practice. Authors have to think very hard about what to put in and how deeply it should be covered if they have only a few