

## The Density Trace

An attractive type of plot that avoids the problem of where to put the class-interval boundaries in a histogram is called a ***density trace*** – see Fig. 2.3.9(d) in the text. It is interpreted in the same way as a histogram. Suppose we want “intervals” of width  $w$ . The height of the trace plotted at any point  $x$  is the number<sup>1</sup> of observations that fall between  $x - w/2$  and  $x + w/2$ . It is helpful to think of this in terms of moving a window of width  $w$  across the horizontal axis. If we centre the window at  $x$ , the height of the trace is just the number of observations falling inside the window. This is done for a window of width 5 cm in Fig. 2.3.9(d) [cf. the class intervals of width 5 in Fig. 2.3.9(a)]. We prefer to look at density traces rather than histograms when we have a computer program available to produce them.

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<sup>1</sup>Most people use a more complicated height for the trace, namely the proportion of the observations that fall between  $x - w/2$  and  $x + w/2$  divided by the “class interval” width  $w$ . This parallels the standardised histogram discussed in Section 6.1.1 in the text. The simpler version above gives a graph with the same shape.