

FIGURE 2.1 A dot plot of the data on children's weights. Such a graphic shows the data in sorted order allowing quick visual senses of both the center and the spread. Values are just drawn on the number line with repeated values being stacked.

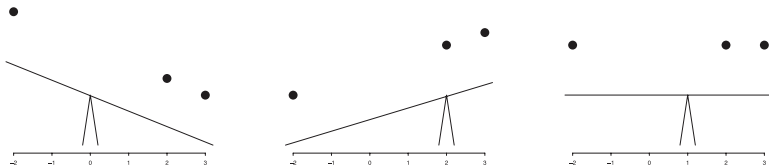


FIGURE 2.2 The mean is the value that balances the dot plot.

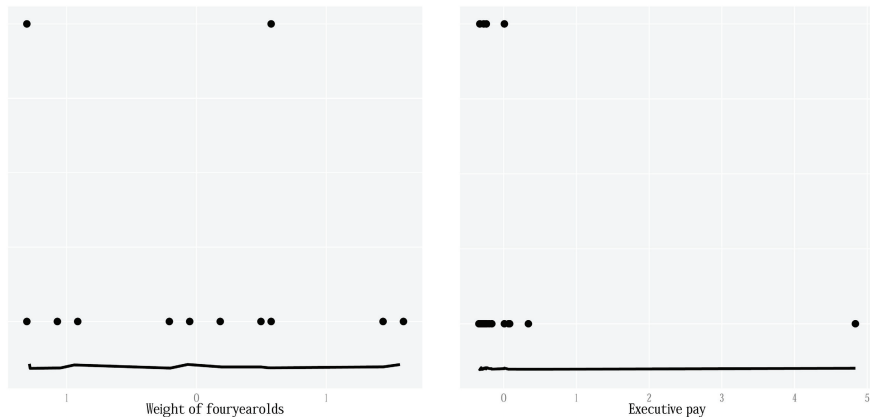
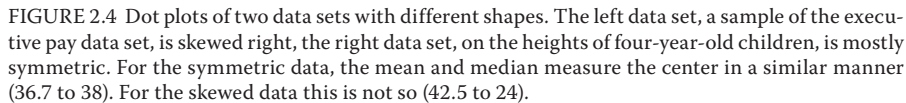


FIGURE 2.3 Plot of absolute z-scores for the wts data set and a subset of the exec.pay data set. There are no values larger than 2 in the wts data set, in agreement with the rule of thumb for bell-shaped data. For the executive pay data, we see a z-score nearly as large as 5, virtually impossible for bell-shaped data.



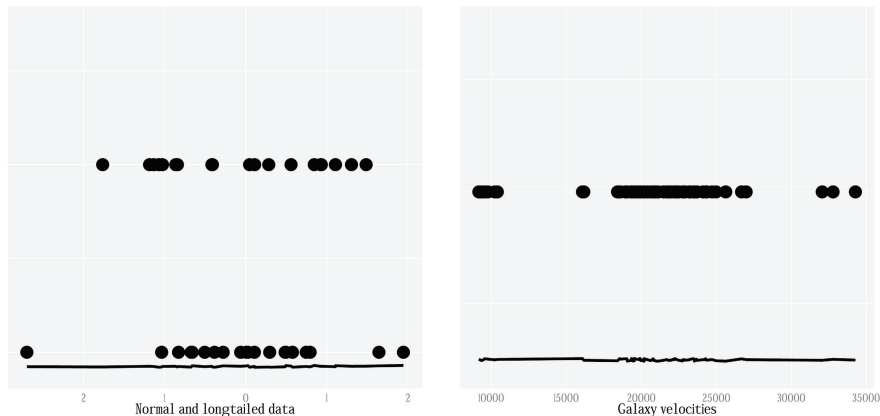


FIGURE 2.5 The left graphic shows stacked dot plots of z-scores of two data sets. The lower one has long tails, the top one “normal” tails. The right graphic shows the galaxies data set. The overlapping dots in the data show the presence of at least 3 clusters, corresponding to modes.

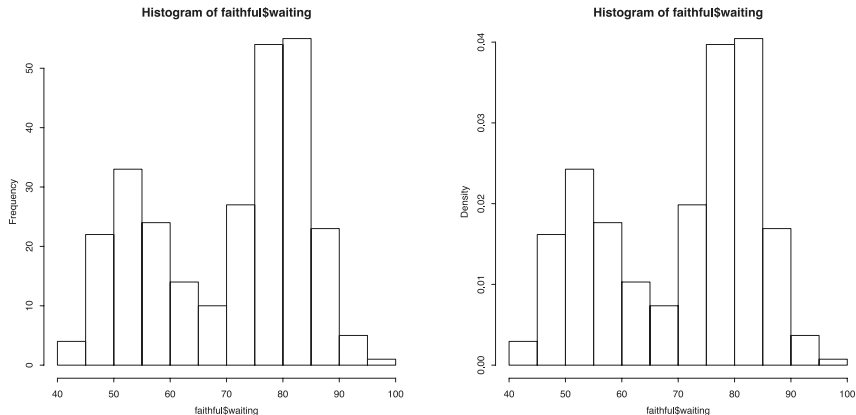


FIGURE 2.6 Two histograms of times between eruptions at the Old Faithful geyser in Yellowstone National Park shows two modes. The left graphic represents frequencies, the right graphic is scaled to have total area equal to 1.

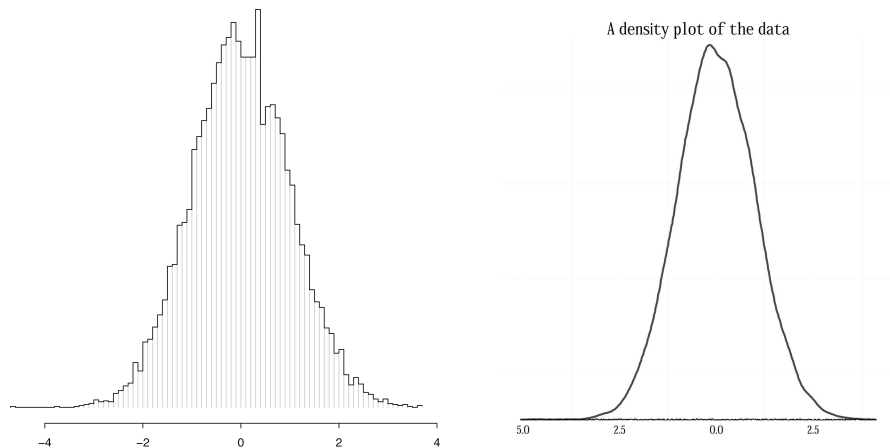


FIGURE 2.7 A histogram of a random sample of $n = 10,000$ data points and a corresponding density plot of the data. The vertical lines of the histogram are de-emphasized. From either, we can see the data is symmetric, unimodal with a mean of 0.

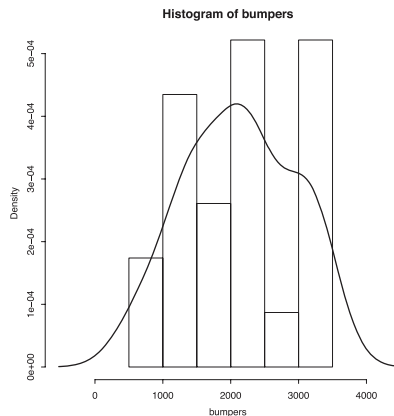


FIGURE 2.8 Histogram of bumpers data with a density plot layered on top.

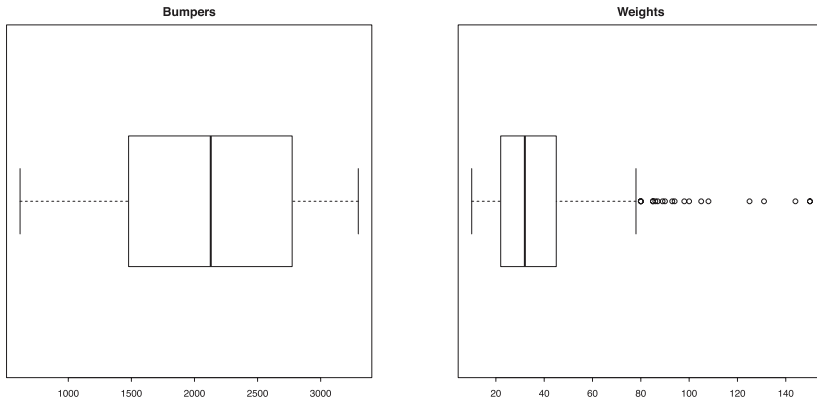


FIGURE 2.9 Boxplots of various data sets. The left one shows the bumpers data set, a mostly symmetric data set with no outliers. The right one, of the weight variable in the kid.weights data, shows a right skew and some outliers.

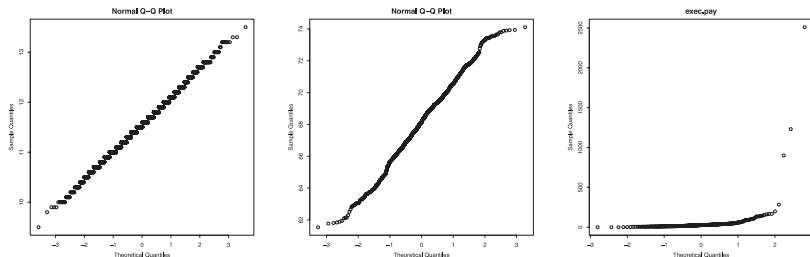


FIGURE 2.10 Three quantile-normal plots produced by `qnorm`. The leftmost graphic shows data on finger lengths of several prisoners from the `finger` variable in the `Macdonell` (`HistData`) data set. It shows data more or less on a straight line, indicating a normal distribution. The grouping is due to the data being discretized. The second graphic uses data on the height of children in Galton's classic study of heights. This data has slight bends on the edges, like an "S". This being due to the tails being slightly less long than the normal. The final data shows what a decidedly non-normal distribution appears like in this graphic. The executive pay data is used which is skewed right and long tailed. Such data shows a clear curve.

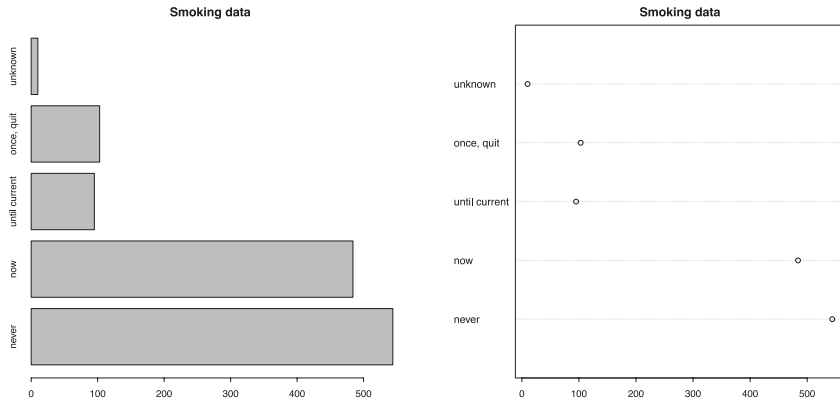


FIGURE 2.11 A horizontal bar chart and dot chart of the smoking data.