a larger sample size before they're willing to rely on n (as opposed to $n - 1$) in the denominator. The approach in this text is to always use $n - 1$ when calculating a sample standard deviation.

The issue at this point isn't when different statisticians invoke the correction factor and when they don't; the issue is why. Because the answer to that question is one that usually takes some serious thought, let me suggest that you take time out for one of those dark room moments I mentioned earlier.

First, take the time to give some serious thought to the ideas of variability and the standard deviation in general. Then take some time to think about how the standard deviation of a population is related to the standard deviation of a sample. Develop a mental picture of a population and a sample from that population. Mentally focus on why you would expect the standard deviation of the population to be slightly larger than the standard deviation of the sample. You should think about the relationship between the two long enough to fully appreciate why the correction factor is used. It all goes back to the point that the variability of a sample is going to be smaller than the variability of a population, and that's why a correction factor has to be used.

Finally, in an effort to make certain that you fully understand how to calculate the standard deviation of a sample, and the point about $n - 1$ in the denominator, let me suggest that you take a close look at Table 2-15. It's an illustration of the calculation of the standard deviation for a sample. My suggestion is that you repeat each of the calculations shown in the illustration, working each step on your own, while also paying particular attention to the next to the last step (i.e., dividing by $n - 1$ before you take the square root).

Assuming you feel comfortable about the different measures of central tendency and measures of variability (and the standard deviation, in particular), we

Table 2-15 Calculating the Standard Deviation of a Sample

Scores/Values	Deviations		Squared Deviations	
(N = 9)				
(X)	(X − Mean)			
7	(7 − 4)	3	9	Sum of Squared Deviations = 54
1	(1 − 4)	−3	9	
3	(3 − 4)	−1	1	54/8 = 6.75
5	(5 − 4)	1	1	Note that $n - 1$ or 8 is used
6	(6 − 4)	2	4	
2	(2 − 4)	−2	4	
8	(8 − 4)	4	16	
1	(1 − 4)	−3	9	
3	(3 − 4)	−1	1	Square Root of 6.75 = 2.598
			54	
Mean = 4				**Standard Deviation = 2.598 or round to 2.60**

can move forward. Next w
data distributions—the wo
next chapter.

Chapter Summary

In learning about measure
some of the fundamentals
duction to the business of
bols are used when referr
the connection to the pr
you've begun to understa
discussing a sample statist

As to what you've lea
have digested several poi
available, and each one
be appropriate in one i
you've likely picked up o
tendency—a measure tha
For example, the mean is
and the standard deviatio

On the variability or
duced to several differen
complex, you've learned
You've also learned how
each other, and (ideally)
measures are in the statis

Finally, you have lea
sonal preference in the r
countered different formu
ideally suited for use with
behind the procedure. Y
ferent preferences when
of the formula for the sa
haps, but they help expl
the same statistical proce

Some Other Thin
You Should Know

At this point, you deserv
sented in a variety of w
itself. The data distributi