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Part II

I feel the analysis of the distribution is misleading. The outlier values (extreme values); the individuals who died in their 50s or lived beyond their late 90s, should be excluded from the distribution. We can find the outliers by calculating the 'standard deviation' from the mean of the distribution, then labeling any values that are 2 standard deviations away from the mean.

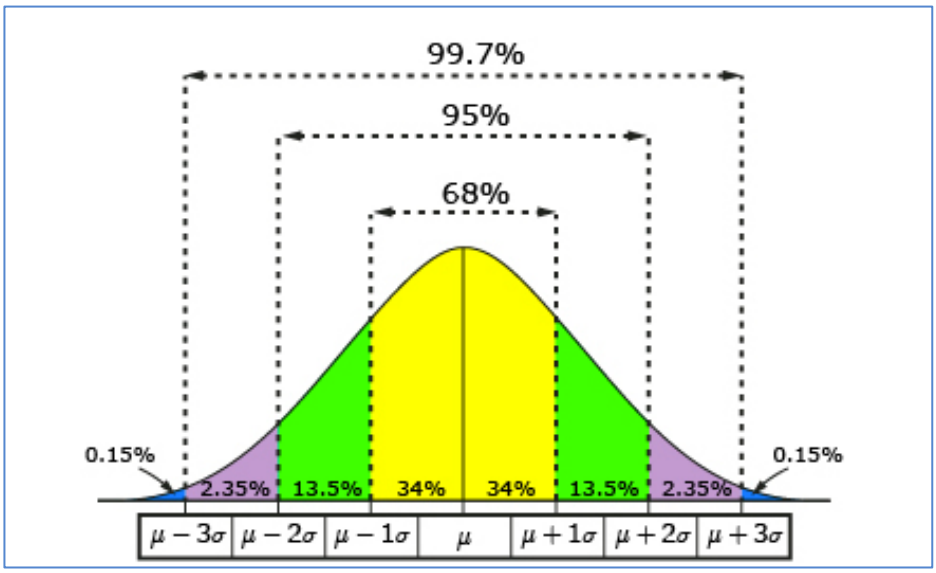

Figure 1 (http://bolt.mph.ufl.edu/6050-6052/unit-1/one-quantitative-variable-introduction/the-normal-shape/)

Fig 1 shows a visualization of imbedding standard deviation values within a distribution, where μ is the mean and σ is the standard deviation.

There should be two separate distributions for males and females, as statistical studies show that females life expectancies on average exceed that of males. In their research article Steven Austad and Kathleen Fischer explain how across species females on average out live males; "The vast majority of animal species have two sexes and those sexes often differ in many aspects of their biology. Most obviously, males range from a tiny fraction of the size of females to considerably larger and live considerably shorter to substantially longer lives (Austad and Fischer)."

The authors go on to explain potential reasons for this phenomenon across animal specifies, they bring up differences in body sizes, males having riskier behavior than females, and differences in chromosomes (Austad and Fischer). They go on to a case study of Iceland's population. Data from 1840 to 1920 was collected. As can be seen from Fig 2, the females outlived the males for every year.

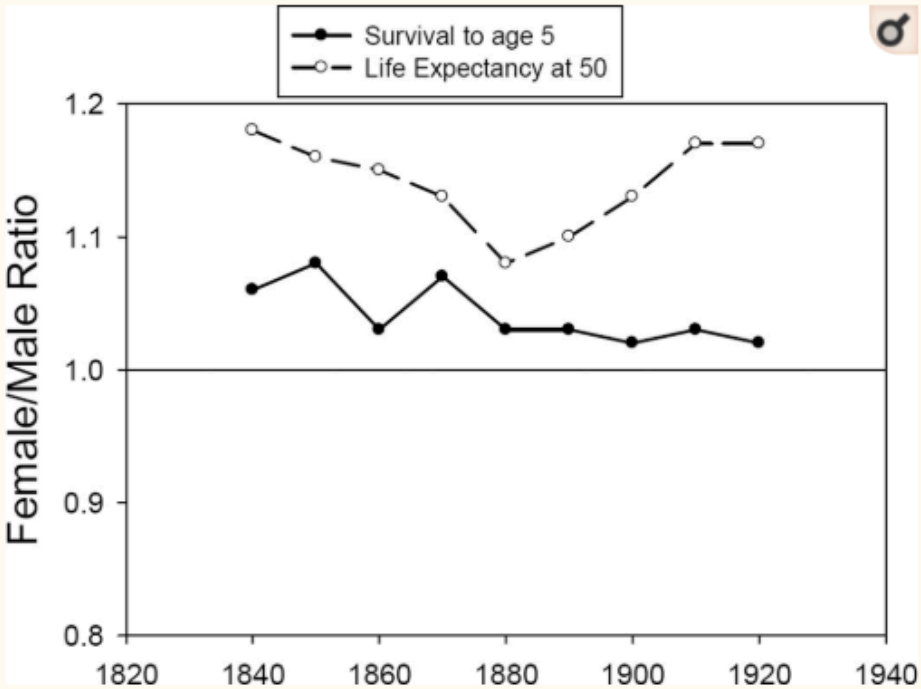

Figure 1

Survival to age 5 and life expectancy at age 50 in Icelandic population cohorts born between 1840 and 1920. Note that female survival surpassed male survival in every year at both the beginning of life and later in life. Source: Human mortality database.

Figure 2 (Austad and Fischer)

"As should be obvious by now, women are not simply resistant to one or two major causes of death. They are less likely to succumb to most of the major causes of death (Austad and Fischer)." The table shown in Figure 3 explains how out of the 15 major causes of deaths in the US, majority of males succumbed to 13, while female deaths were attributed to stroke and Alzheimer's disease.

Rank	Cause	Percent of total deaths	M/F age-adjusted death rates
1	Diseases of heart	23.5	1.6
2	Cancer	22.5	1.4
3	Chronic lower respiratory disease	5.7	1.2
4	Accidents	5.0	2.0
5	Cerebrovascular diseases (stroke)	5.0	1.0
6	Alzheimer's disease	3.3	0.7
7	Diabetes mellitus	2.9	1.5
8	Influenza and pneumonia	2.2	1.3
9	Chronic kidney diseases	1.8	1.4
10	Suicide	1.6	3.7
11	Septicemia	1.5	1.2
12	Chronic liver disease	1.4	2.0
13	Hypertension	1.2	1.1
14	Parkinson's disease	1.0	2.3
15	Pneumonitis	0.7	1.8

Figure 3 (Austad and Fischer)

Overall the closing statement contains normative information; the average life expectancy in the US doesn't give us enough information. We can't simply assume that data sets, our data and the data used for calculating the life expectancy in the US are the same. I also don't understand why the US average life expectancy is referenced, The World Bank has offices around the world, why not use averages from other countries, list a country with the highest HDI (Human Development Index). Simply saying that an average of 81 isn't impressive when compared to the US average is a normative statement, as the average of 81 years would be considered highly impressive if compared to the life expectancy in Sub-Saharan Africa

Bibliography:

- "The 'Normal' Shape." *Biostatistics*, bolt.mph.ufl.edu/6050-6052/unit-1/one-quantitative-variable-introduction/the-normal-shape/.
- Austad, Steven N., and Kathleen E. Fischer. "Sex Differences in Lifespan." *Advances in Pediatrics.*, U.S. National Library of Medicine, 14 June 2016, www.ncbi.nlm.nih.gov/pmc/articles/PMC4932837/.