Weekly Best Practice Commentary #2

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Uncertainty

1. ![A picture containing diagram

   Description automatically generated]()Figure I Do not Like:

This first figure is from Heat Flow Through Avian Plumages: The Relative Importance of Conduction, Convection and Radiation, Glenn Walsberg, 1987. The figure shows the thermal conductivity of three different species (Gambel’s quail, crissal thrasher and house finch) through three different avenues (thermal conductivity of air contained within coat, radiative conductivity and thermal conductivity of feathers). The bars represent mean values with +- SE. The first problem with this figure is the bars themselves. I don’t like the different hashing for the three avenues of heat flux, I think it adds to much noise to the overall image and makes it difficult to see the SEs. Also, each bar is individually labeled. To improve this figure, I would first remove the hashing and the labels for each individual bar. I would apply a grey scale to the three different heat flux avenues (white, light grey, grey) and then create a legend to distinguish between. I also would reorganize the bars, the general order from least to greatest is RAD, FEA and AIR and I would order the bars as such. Displaying standard error here is fine, it is just difficult to see given the presentation.

1. Figure I Do Like:

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This figure is from How feathered are birds? Environment predicts both the mass and density of body feathers, Osvath et al. 2018. Overall, I think this graph is easy to read gets to the point. I like how they split up the information into 6 different graphs and didn’t try to stuff everything into one unreadable figure. Similar to the previous, this figure shows mean values +- SE, however here instead of using a bar graph they used points to represent the mean. To me this displays the information in a more efficient manner and negates the need for long, excessive bars. If I could slightly tweak this figure in one way, I would change the error bars to either graded error bars without caps or confidence strips (both discussed in Claus-Wilke Chapter 16. I don’t personally know how to incorporate either but hope to learn (I have been sifting through Claus-Wilke’s Github). I like the idea of the error bars showing a bit more information about how probable each value is. Finally, I like the silhouettes, it adds a nice clean touch to show which habitat type/bird group they are talking about.