1. Consider Figure 1 from the Hillman et al. paper.

   A. What was the experiment that lead to the results? (What did the authors do, what did they measure, what were the results).

- just look experiment + control: with non functional parental allele OK
- measured Ube3a transcript level via quantitative RT-PCR in various tissues. What organism(s)?
  protein level via
  hippocampus, thymus, liver, heart.

they normalized w/ FPKM values of UBE3A transcripts and what did they also look at?

   B. What do the data show?

a) in both Ube3a$^{m/p+}$ & $^{m+/p-}$, the Ube3a transcript & protein expression levels are higher in the CNS
b) than N-CNS
c) when Ube3a is normalized via FPKM, only lung is significantly different from the exp. level in the hippocampus i.e....
d) the Ube3a FPKM level of maternal is significantly higher than paternal by ≥10 fold in the hippocampus, but not significantly different in other parts of the body.

   C. What can we conclude from the data?

a) functional parental allele is not necessary to display WT transcript/protein levels in the
b) CNS & N-CNS in mouse tissues.
c) discrepancy in maternal & paternal together makes the level of Ube3a FPKM in hippocampus overall high FPKM of Ube3a (one of) similar to other tissues except the lung

   D. What do the authors conclude from these data? Do you agree or disagree with their conclusion (e.g. the last sentence of the introduction), and why?

concluded that imprinting does not function to regulate the dosage of Ube3a/UBE3A in neurons. I disagree because in figure 3, the Ube3a/UBE3A level is higher in mouse than in opossum for the cortex. Imprinting occurs in mice while opossum biallelically expresses Ube3A, so imprinting may have a function in increasing dosage in the CNS, but not there must be other mechanisms to result in higher expression in the CNS in opossum remains.

very good point! What they assumed was that imprinting would ↓gene product!!

When Ube3a FPKM is looked separately in CNS vs N-CNS, then the levels are not significantly, so not significantly