

Study Questions: Construction and Interpretation of Experimental Results

Introductory Biology
Fall 2009

Let's consider Andersson's widow bird experiment again.

1. State the biological hypothesis and prediction that with his experiments? How many predictions of this hypothesis did he test? Explain your answer. (You should be able to answer these questions directly from class lecture)

2(a). State the null and alternative hypotheses for a comparison of one control (banded only) with the other (banded with tail cut and re-attached).

2(b). Suppose that an inferential test of your null hypothesis from question 2(a) finds $P = 0.62$ (this is a made up value - it is not from the original study). What will you do with respect to the null and alternative hypotheses? What does this suggest about your controls?

3(a). State the null and alternative hypotheses for the comparison of increased tail length with the sham control.

3(b). Suppose that an inferential test of the null hypothesis you just stated for the comparison of lengthened tail and sham groups showed was that $P = 0.04$. (This is also a "made up" statistical result - it is not exactly what Andersson found.)

- What does this (P) mean with respect to the null and alternative hypotheses?
- What does this mean with respect to the original hypothesis (question 1)?
- Have you proven, disproved (or neither) the original, main hypothesis of question 1? Explain!