

Be There or Be
(Chi)-Square!

What is a Chi-Square?

- Statistic for categorical data
- Similar in concept to *t*-test
- χ^2

Types of Chi-Squares

- Independent (this lesson!)
 - Compare categories
 - Like the independent t
- Goodness of Fit
 - Compare your data to a population
 - Like the single-sample t
- McNemar
 - Compare changes over time
 - Like the dependent t

Independent Chi-Square

Compare Observed to Expected

- Observed – your actual data
- Expected – if there was NO RELATIONSHIP between your variables
- Chi-Square value is the difference between observed and expected frequency counts

Assumptions

- Observations are independent
 - People or objects are only in 1 group
- At least 5 expected per cell

Egg-xample Time!

- Do chickens' egg colors influence whether they lay an egg daily?
- Null hypothesis:
 - There is no relationship between the egg color and whether an egg has been laid.
- Alternative hypothesis:
 - There is a relationship between egg color and whether an egg has been laid

EggsPerDay	0	1
GallusEggColor		
Bluish-Green	0	55
Brown	35	860
Light Blue	0	50