

## Class 30: Topic 24: Goodness-of-Fit Tests

**Held:** Monday, 14 April 2008

**Summary:** We consider yet another way to use samples to explore populations. In particular, we consider what samples can tell us about non-binary categorical variables. We use the chi-squared test to explore such relationships.

### Overview:

- Extra credit for attending one Take Back the Night event this week.
- Reminder! Lightning presentations are Wednesday. I'll do a short demo of the data projector (or at least I hope I will). The Presentaiton Rubric is also available.
- Due Friday: 24-6, 24-7, 24-9, 24-15, 24-20.
- I was sick on Sunday, and therefore unable to finish grading your exams. However, what I saw on problems 1 and 2 concerned me. Hence, we're going to find a way to spend some time reviewing, and I will provide some sort of makeup activity to encourage you to learn the material. I am also distributing a "how do you study" survey to better understand what's going on.
- I've been thinking about ways to make hell week less hellish. It strikes me that dropping exam 3 is the best way to go. That will also give us two more days that we can use to consider the topics that many of you are misunderstanding. To give you an alternate "checkup" on those topics, I will probably give some short in-class and take-home "exam-lettes".
- Handouts: R Notes for Topic 24.
- Due: 21-9, 21-10, 21-11, 21-22, and 21-23.

### Overview:

- Exploring categorical variables.
- The chi-squared test.
- Using the chi-squared table.

## Exploring Categorical Variables, Again

- As you know, we're looking at what samples tell us about populations.
- We started by looking at two basic tests that one sample tell us about one population:
  - Confidence intervals
  - Tests of significance
- On Friday, we looked at a more complex issue: What two samples can tell us about the relationships between two populations.
  - The two populations may be two existing populations we sampled.
  - The two populations may be part of an experiment.
- In each case, we dealt with proportions for a binary categorical variable.

- Today, we consider the proportions associated with a non-binary categorical variable.
    - We will only do significance tests.
  - What will our null and alternate hypotheses look like?
  - Particular techniques are left to the activities.
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