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Part I. Methodology

For my question I chose the one about the movie *Inception* because it seemed to me like this was kind of guy movie, so I was curious to see if there's a difference in male and female attendance at this movie.

Question #101: Did you see the movie Inception?

Category to be studied: I will study the proportion who say "yes."

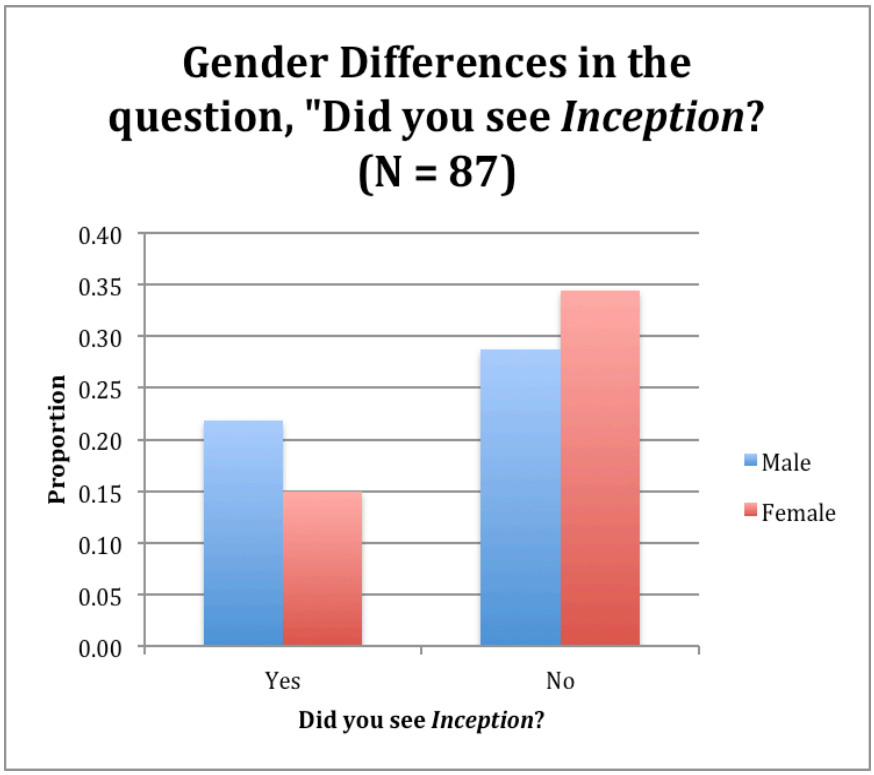
Collaboration. I worked with Doug Statman to ensure we did everything correctly, but I chose a different question than him, so my report is my own work.

Part II. Side by side bar charts from a contingency table

The table below shows the proportions of the sample who gave every possible combination of answers to (1) "What is your gender?," and (101) "Did you see the movie Inception?"

	Saw *Inception*	Did not see *Inception*
Male	0.22	0.29
Female	0.15	0.34

This results in the following graphic to visualize the data:



Part III. Confidence intervals

Let *p* be the proportion of all SU students who saw the movie *Inception* this past summer. From the data I collected, I have a sample proportion of *p*-hat = 32/87 = 0.368, and so for my sampling distribution I will have standard error of approximately 0.052, and hence the margin of error for my 95% confidence interval is about 0.101. This tells me that I can be 95% confident that the true percentage of all SU students who saw *Inception* is between 26.6% and 46.9%.

Within my sample, 44 students are men, and *p*-hat = 19/44 = 0.432 is the proportion of the males in my sample who saw Inception. Within this group, the standard error is approximately 0.070, and so the margin of error is approximately 0.146. This tells me that I can be 95% confident that the true percentage of all **male** SU students who saw *Inception* is between 28.6% and 57.8%.

Within my sample, 43 students are women, and *p*-hat = 13/43 = 0.302 is the proportion of the females in my sample who saw Inception. Within this group, the standard error is approximately 0.078, and so the margin of error is approximately 0.137. This tells me that I can be 95% confident that the true percentage of all **female** SU students who saw *Inception* is between 16.5% and 44.0%.

Part IV. Discussion

For this question, I cannot think of any hidden variables that would influence this particular question. It seems like students in our class (both male and female) are just as likely to have seen this movie as anyone else in the general SU population. Maybe biology students like science fiction more than the average person and so as a group would have a higher incidence of seeing this movie, and we do have a disproportionate number of biology majors in our class, but this seems like a reach.