Intro to Sampling

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Math 141, 2/28/22

Outline

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- Discuss random sampling: the heart of statistics!
- Perform a group sampling activity

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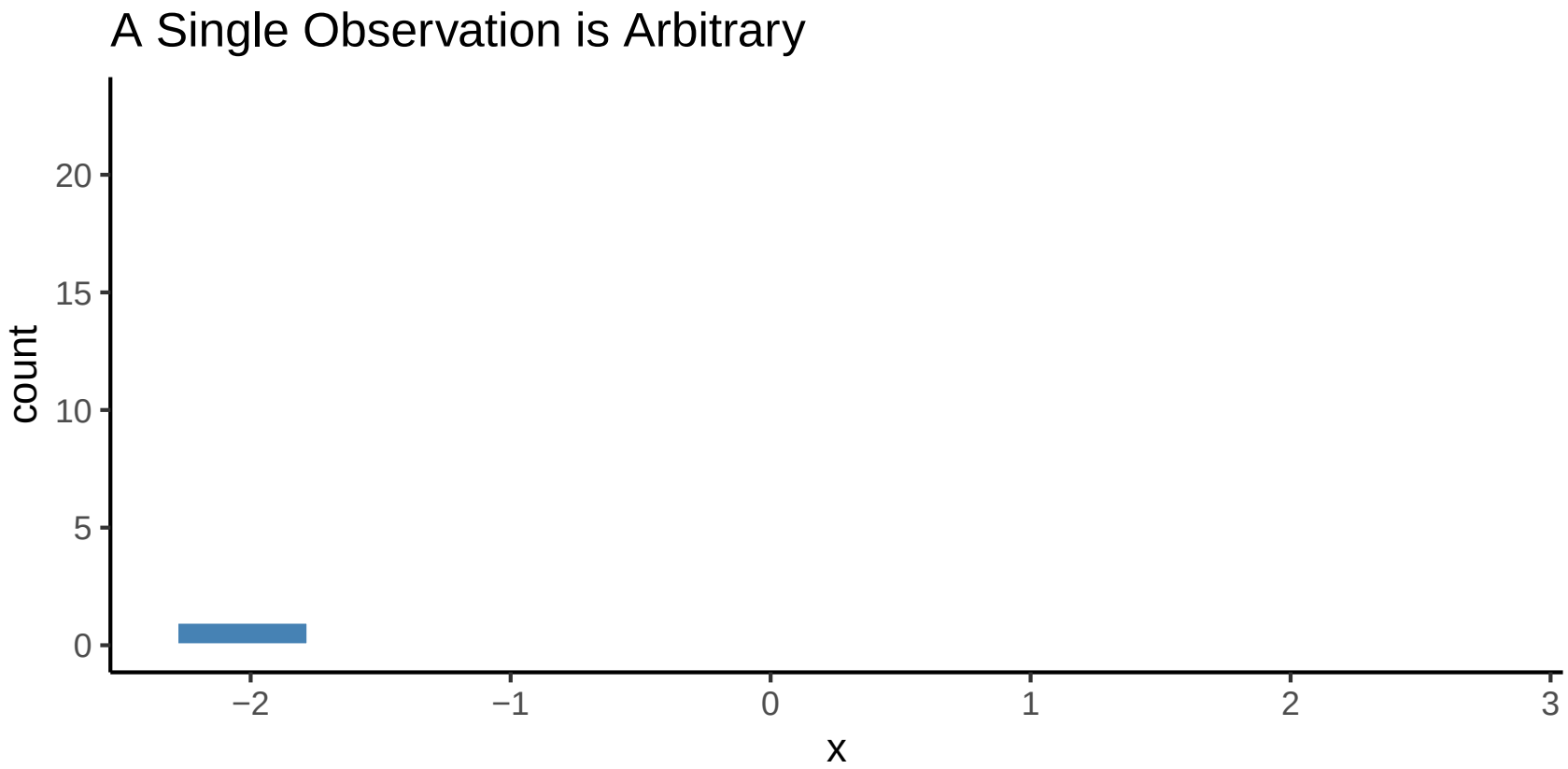

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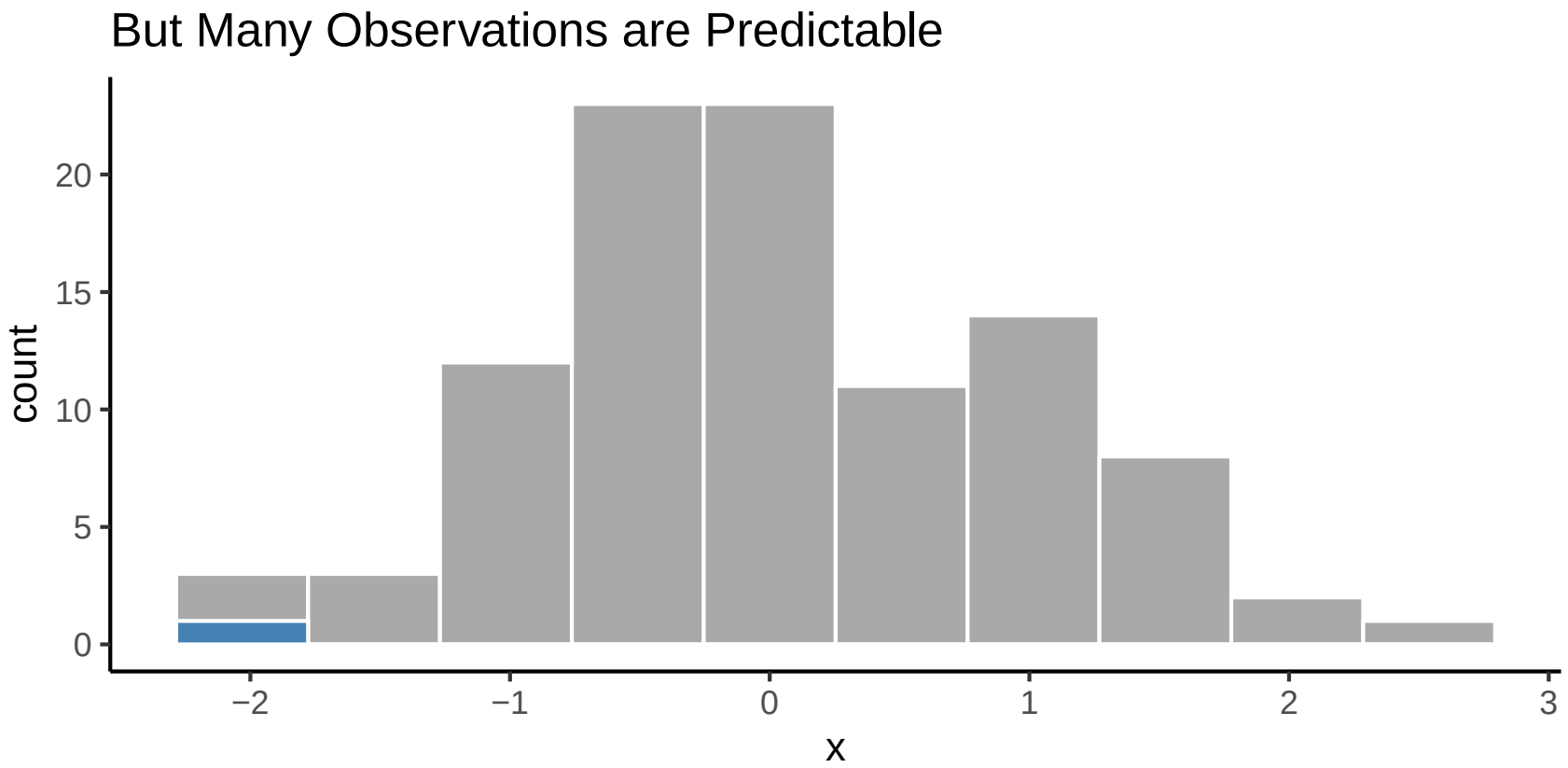

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  - The standard deviation of the statistic tells us how its value fluctuates from sample to sample.

Population vs. Distribution of Sample Statistics

Sampling Activity

Goal: Describe the distribution of a statistic by observing its average value and variability between samples. Compare to the distribution of the variable in the population.

Activity

1. Thoroughly shuffle one of your group's deck of cards.
2. Draw 10 cards from the deck (without replacement) to form a sample.
3. Compute the mean value of your cards (counting Aces as 1 and Faces as 10)
4. Write the value of the mean on a sticky note and add to chalkboard.
5. Repeat steps 1 - 4 an additional four times.

Discussion

Answer the following questions in your group:

- What is the theoretical mean value for the data set of card values?
- How does the distribution of sample means compare to the distribution of card values?
- What is the relationship between the centers of the two distributions?
- Which distribution appears to have more variability?
- How do the shapes of the two distributions compare?
- What does the variability of sample means suggest about the means in repeated samples?